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THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 1. SAN FRANCISCO, SATURDAY, JANUARY 5, 1901. THIRTIETH YEAR. Office, 330 Market St.

Eureka Cross-Sections.

Lemons.

California lemons are constantly growing in volume of product and in favor in the markets of the Atlantic States. Until recently it was thought that California might lemonize the central West, but the far East would still be served from Sicily. Now the issue is sharp at the East, and California fruit is constantly winning favor. This is seen in the increasing shipments and in the nervous agitation among the New York importers. They are fairly becoming hysterical. California has fairly won all the success there is to come in this line. Our growers have given nearly twenty years to earnest work in finding the right place for the lemon and the right lemon for the place and the right way to handle the fruit after it is picked. In all these directions creditable results have been shown and the California lemon is now winning on its merits, being given a chance to do so by the protective tariff. Something like 2000 carloads were shipped out of the State last year.

We give on this page portraits of the most popular California lemons, as prepared by Mr. B. M. Lelong for his report on Citrus Culture. There are a few more which enter into the commercial product, but this group includes the leaders. The Villa Franca is a vigorous lemon and hardier than some others. It is succeeding in more regions than any other. The Eureka is a beautiful fruit and most popular in the southern coast region where the sun heat is less than in the interior. The Lisbon is less in favor because more thorny, but it bears fruit all through the tree. The Genoa is less widely grown than the preceding, but it is a favorite with some on account of its seedless character, good keeping quality, and the fact that it makes a small tree without thorns. The Bonnie Brae is the silkiest, thinnest skinned, and most lime-like of the lot. It has warm friends, though the aggregate product is not large.

Lisbon Cross-Sections.

Eureka.

Bonnie Brae.

Lisbon.

Genoa Cross-Sections.

Villa Franca Cross-Sections.

Genoa.

Villa Franca.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, January 5, 1901.

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The Week.

The new century opened with quite a bluster and a temperature which led people to warm up their stoves and fireplaces, but nothing harmful has yet come in the way of frost in places where frost can do injury. The citrus fruit places have all held above the danger line and now the wind has changed and we seem to be more likely to have rain than freezing. We do not want hard freezing anywhere, except it be in a tourist place where a little bracing is held to be desirable, but it will be just as well to have less warm weather than we had in December, for that makes vegetation too active. The cold spell has, therefore, been quite acceptable to fruit men, and the grain men around Stockton, who suffered last year from the presence of summer insects in winter, are counting on the frost to cut them off this year.

The chill in the air has added zest to the New Year festivities, which were arranged on quite a broad scale to suit the birth of a new century, but the jubilant racket was, according to our observation, not greater than for an ordinary sort of year. The fact may be that this new century idea has been overworked and really became very weary before its time for culmination. However, the century came on time and in good shape.

The Weather and Crop Review this week takes an annual form and appears upon a later page than usual. Mr. McAdie's interesting recapitulation is an excellent illustration of the immense advantages of modern progress. At the beginning of the last century people had to study their diaries to find out what they had lived through. The achievement of a century hence will be to tell a year in advance what weather will be encountered.

Wheat flashed on Monday and scored a speculative advance of 3 cents in Chicago. To-day (Wednesday) it has flopped and has lost part of the advance, but is still better off than before the rise. Options here have sympathized with the Eastern activity. Spot wheat here has not advanced, but it is firmer and nominally higher. Shippers do not concede an advance, but they probably could not get much wheat without it. Barley is practically unchanged, both on spot and speculation. Oats are firmly held and quiet. Corn is easier through larger arrivals of Eastern. There is still complaint of damp California corn. Millfeeds are unchanged except that ground corn is easier. Hay is about as before—slow, with firm holding. Large arrivals might lower it somewhat. Beef and mutton are firm at the last advance. Hogs are a little higher and in good shape. The price may go higher until it reaches a point at which Eastern hogs will move in. Lamb is scarce and high. Butter has declined a little, but is still in fair shape for choice to fancy brands; poor butter suffers from contact with packed, which is better. Cheese is still up and unchanged. Eggs are a little lower, but further change immediately is not anticipated. Turkeys had a wider range than ever this year and their time is passed. Fryers and broilers are high. Oranges are in fair supply and moderate demand, but it has been too cold to make wide call for them. Lemons have been helped by the advance in lime values, but there has been no change in rates. Apples are in good supply and fair demand for choice. There is nothing doing in dried fruits. Some prunes are moving toward Europe at a concession made for export. Almonds are in better tone, in sympathy with slack supply in Europe, but there has been no added movement yet. Walnuts are steady and little doing. Beans are still stiff for whites and Limas, but the high prices are expected to decrease movement. Potatoes are abundant, except fancy, which sell well, while common are slow and weak at old prices. Onions are unchanged and mostly in second hands. Wool is still celebrating the holidays; warehouses still locked up and nothing doing.

The visit of President McKinley seems to be assured, and it will be at a time when he can be entertained to good advantage. The launching of the battleship Ohio, which the President will witness, will take place May 18th. He expects to reach San Francisco May 16th or 17th, and will stay here perhaps four or five days after the ship is launched; so he will have plenty of time to attend all functions which may be gotten up for him. He naturally expects to visit places other than San Francisco and to remain in the State some time. The President visited this coast to attend the National Encampment of the Grand Army of the Republic in 1886, but at that time did not have an opportunity to see as much of California as he desired; hence he is making plans for an extended visit this trip. The President and Mrs. McKinley are already making preparations for the visit, and expect to derive pleasure and recreation from the journey hither and the sojourn here.

An earlier sensation, however, will be the assembling of the California Legislature, which will convene on Monday next. The usual amount of connubiation has been in progress for some days and will fill this week. There are a number of agricultural things which this Legislature ought to do, but it is too soon to speak of them now. So long as there is a doorkeeper or committee clerk to be chosen, the excitement is too high for greater things. But the time will come. Do not let your representative remain in the dark as to what you want. Legislators are not mind readers: they have to see something black and white and other colors, too, perhaps.

Do not forget the Fruit Association movements. The one in this city Jan. 8 will be the forerunner of the larger assembly at Sacramento Jan. 15. By the way, the latter meeting will be held in Grangers' Hall instead of the Agricultural Pavilion and the change is one fit to be made. To meet in the pavilion in January would be productive of pneumonia at least, while the other place is cozy, comfortable and suited to both hearing and speaking. All fruit sections should be represented. It will be a good chance to see how the fruit interest progresses and to see the elephant, also, in the State Capitol. Let there be a large attendance.

Speaking of stock interests, they are still advancing and laying the foundations for further advance. There will be held in this city on January 8th a meeting of the Pacific Coast Stock Association, which is a branch of the greater organizations covering the whole country. We are glad to know that they propose to look into all matters affecting the live-stock industry, and we hope they will be able to do something to make our animal interests something nearer to what they ought to be than they are at present. A telegram just comes from Chicago that signatures were affixed in that city this week to a contract with the Russian Government for 1500 barrels of a specially prepared meat to feed the soldiers of the Czar's army. The vast field for supplies in Russia and Siberia has been opened to Americans only lately, and it is believed that this contract is merely the predecessor of others which will amount to millions of dollars and result in the introduction and consumption of American packed meats in every part of the vast northern Empire. As it now stands, this product will be shipped from one of our Pacific coast ports and will roll on the rails through our pastures which should be supplying the materials for the traffic. The Pacific States should grow all this beef and do all this packing; and if the Pacific Coast Stock Association can do anything to promote this perfectly natural and practicable business, let them pull off their coats and go to work.

On recommendation of Dr. C. H. Blemer, State Veterinarian, Governor Gage has issued a proclamation changing the present quarantine against the disease among cattle known as Texas, splenetic or Southern fever, and fixing it as follows: Beginning on the Pacific coast where the northern boundary line of Monterey county connects with the Pacific ocean; thence easterly along the the northern boundary of Monterey and San Benito counties to the western boundary line of Merced county, thence northerly, easterly and southerly along the western, northern and eastern boundary line of Merced county to the southeast corner thereof; thence northeasterly along the northern boundary of Madera county to the northeast corner thereof; thence southerly and easterly along the eastern boundary line of Madera, Fresno and Tulare counties to the southeast corner of Tulare; thence easterly along the southern boundary line of Inyo county to its intersection with the eastern boundary line of the State.

This considerably reduces the area under restriction, and will be of advantage to the stock interest.

It is very interesting to note that comparative tests at the East show the superiority of California lemons. Reports are published giving the comparative citric acid test by Stillwell & Gladding, chemists to the New York Produce Exchange of selections of California and Sicily lemons, and are attracting much attention. The comparisons were as follows: Ninety-one and one-half California lemons would yield one United States gallon of juice; 128½ Mediterranean lemons would yield one United States gallon of juice. The specific gravity of the juice in each was 1.041. Three hundred California lemons would yield 450 ounces juice, containing 26.64 ounces crystal citric acid; 300 Mediterranean lemons would yield 325 ounces juice, containing 19.70 ounces crystal citric acid. This looks like the superior kernel contents of California almonds which was demonstrated a few years ago. California fruits not only look well, but they have the true stuff in them.

What they think of water in southern California, and what they should think of it everywhere, in the interior of the State, at least, is shown by the protest which the irrigators of Azusa, Duarte and Covina, in Los Angeles county, are making against the granting of right of way for power purposes by the Government through the San Gabriel forest reserve to an electric power company and electric water company of Los Angeles. The litigation has brought out most of the residents of San Gabriel valley as witnesses. The hearing began on Sept. 6th, and, with the exception of a two weeks' adjournment, continued until Dec. 13th. The testimony taken aggregates 2220 pages of typewritten manuscript. Each side employed six expert engineers. The irrigators now have sixty days in which to file briefs, after which the case will be decided in Los Angeles; an appeal is certain to be taken from the decision to the General Land Office at Washington. Water is worth fighting for, and the forestation of the watershed is the condition of a supply during the irrigating season.

San Diego still holds to the practicability of silk enterprises. The local association has adopted a new constitution and elected a new set of directors, as follows: Dr. J. Mills Boal of La Jolla, Capt. Dethlefson of San Diego, Edward Lane, George W. Marston, George Telford of Ramona, Mr. Gulich of Chula Vista and M. F. Heller. Mrs. Carrie A. Smith is still the priestess of the silken temple and is as firm in the faith as ever. They are negotiating with an Illinois man to come out and start a silk mill. He says it takes five pounds of cocoons in Illinois for one pound of raw silk.

The prune situation at San Jose seems to have quicted down and the objectors have spiked their guns. The San Jose Herald says the "kickers have lame legs." We hope it all means that those in the interest propose to pull together for success.

QUERIES AND REPLIES.

Vine Cuttings Which Failed.

To THE EDITOR:—Last winter I set out fifty acres in vineyard, using the cuttings from my old vineyard which I found free of phylloxera. I plowed deep, using a subsoiler, breaking it to 12 to 15 inches. I then set out cuttings with crowbar about 2 to 2½ feet deep, filling hole gradually with fine dirt with the hand, taking care to press it well at the bottom with a wooden stick. I cultivated afterwards several times. The soil is gravelly. It held a little moisture 4 inches from the top all summer. The cuttings were set out during January and February and never had a good soaking rain afterwards. I lost about 20%; balance made what I consider a very poor growth, say, 3 to 6 inches. After the rains of last October and November they seem to have taken new life and have nice green leaves on again, while the old vineyard has been bare for two weeks. Do you think such a vineyard will come out all right? Would you reset only the dead cuttings or those that made 4 inches and less of growth?—ORCHARDIST, Madrone, Cal.

Perfectly satisfactory answer to such inquiries could only be based upon actual observation, and it should have been made before the rains and while the cuttings were failing to make a reasonable growth. We can only submit conjectures. We presume the gravelly soil was dry at the depth the cuttings were set, because of two or three years of scant rainfall. There were many regions in which last year's rainfall was not enough to fill the subsoil which was dried out by the preceding dry years. Examination showed fair moisture above and dry soil below, and moisture again lower down. We presume the cuttings which made roots at the higher joints found moisture enough to sustain a little growth, and others died outright. Old vineyard was probably rooted down so far that it drew moisture from below the dry streak. With enough moisture in the future the vines will come through all right, and we should only reset those which are dead and the weakest of the others. We doubt the wisdom of using so long a cutting and planting so deep. There is usually too little heat to start roots from the bottom of such a cutting, but we do not think that was the chief trouble in this case.

Canker Worms.

To THE EDITOR:—Last spring our apricot trees were infested with worms, mostly green or brown striped in color, about one-half or one inch in length. By shaking the tree they would drop down hanging by a web by the hundreds, and sometimes by the thousands. Many trees in the valley were entirely stripped of their foliage when the apricots were about one-half grown. One of my neighbors says he lost forty or fifty tons of fruit last summer by the ravages of this worm. In my own orchard they did little damage except to about twenty trees, but I fear if we do not do something they will be more destructive another year. Paris green has no effect on them.—ORCHARDIST, Suisun.

You have to deal with the canker worm. As the female moth has no wings, she has to crawl up the trunk of the tree to deposit her eggs on the twigs, whence come the worms of a which you write. Owing to this habit of climbing the tree trunk, traps are the most effective means of fighting the moth. You can band the trees with paper and spread on the band a mixture of printers' ink and molasses. The use of a wire cloth trap, is, however, preferred. Take No. 14 or 16 wire cloth and cut in strips six inches wide. Draw one around the tree trunk, drawing it very close on the upper edge and fastening it with a tack. To make it close so that the small moth cannot crawl under, it is well to put on a two-inch strip of cloth first and draw the top edge of the wire cloth closely around this. Allow the lower edge of the wire cloth to flare out half an inch or so from the tree all around. This will prevent the moths from getting up, and the accumulated moths will have to be cleaned out once a week for a month or more. As our climate is so mild, the moths are active early, and the traps should be put in place in December.

Asparagus Growing.

To THE EDITOR:—I intend to put out some asparagus. Can you tell me how to proceed; also what time of the season?—A READER, Woodside, Cal.

You should have stated whether you desire a small bed for home use or propose to undertake field culture. Probably it is the former. In that case take as good deep loamy soil as you can find and work it deeply, even trenching it or spading to two spades depth. Work in deeply as much well-rotted manure as you can spare: you are not likely to use too much providing you cover it in deeply and spread over it a layer of light soil on which to place the roots. If it is for a small bed you had better buy good one-year-old roots from the seedsmen, and save a year's time and some trouble. Place the roots on the loose layer of soil and firm it around them well, setting the plants about 2 feet apart each way if you expect to rely upon hand hoeing. If you will use the horse make the rows 4 feet apart and set the plants 18 inches apart in the rows. When the plants are well set cover the crowns with 2 or 3 inches of light soil and a mulch of coarse manure to prevent packing of the surface. You had better do this now if the ground is in good condition or as soon as it comes into such condition, for the asparagus is very restless in the California winter and desires to start growth early. Full accounts of asparagus growing are given in our book "California Vegetables." The vegetable is constantly gaining ground in the State but for home use is not grown as widely as it should be. There should be a bed on every farm and in every suburban garden.

Stocks for Prunes.

To THE EDITOR:—I want to put out about 300 prune trees; I have about five acres in bearing of nine-year-old trees on myrobolan stock. I am not exactly satisfied with myrobolan root; first, they sucker so bad if touched by plow or roots are cut by cultivator, and, second, the fruit seems to dry or shrivel more or less before maturity, which does not occur in peach stock on the same ground. The ground that I want to plant is too wet for peach stock, so I would like to know if almond stock is good, if it can stand as much wet as the myrobolan, and if prunes will do all right on almond stock? Does it make any difference if almond stock be from the bitter or hard shell varieties?—ORCHARDIST, Healdsburg.

There must have been some mistake in your myrobolan roots, for it is not usual for the true myrobolan to do much suckering. Possibly, you have seedling plum roots; these are exceedingly troublesome in that way. The shriveling of your prunes before maturity is probably due to failure of moisture toward the end of the summer. The almond would probably escape that, because of its deep-rooting habit, just as the peach does, but the almond would not do at all where there is too much water in the winter or spring. It is worse than the peach in this respect. You might succeed with the true myrobolan, which would root more deeply than the plum roots which you have, or you can prevent the shriveling by preparing to give the land one good irrigation just before the shriveling usually begins. The hard shell sweet almond is chiefly used for stock. It takes the French prune admirably and makes a fine tree if the soil is light, deep and well drained; but it can not endure standing water.

Chestnuts.

To THE EDITOR:—Will you tell me the best variety of chestnut to set out on my place in the Santa Cruz mountains, 1400 feet elevation, "warm belt," overlooking Monterey bay. We have four chestnuts in bearing, giving excellent results, but do not know the kind, as planting was done before we owned the place.—CHESTNUTS, Santa Cruz county.

The chestnut most widely grown in California is the Italian or Spanish, a sweet and usually quite large nut. The Japan Mammoth, a very large variety is grown to some extent, and so is the American, a very small, very sweet nut especially esteemed by those who come from the chestnut States of the East. The best chestnuts are the French Marrons, large, sweet and productive. Of these the Marron de Lyon and the Marron Combale are chiefly grown. If you care to send samples of the nuts you have growing we can probably have them named for you.

Peach Varieties.

To THE EDITOR:—Which do you consider the best peaches—two or three varieties—to plant here? Elberta, Muir and Salway are highly spoken of here. Which do you consider the better all-round peach, the Elberta or Muir? Or do you consider some other variety better than either? Which is the best apricot, and almond? It is generally believed here that neither of the latter will pay as well here as the peach or olive.—READER, Corning.

The Muir is a safer proposition than the Elberta. It is well tried and satisfactory to canners and dries well. We would rather plant the Lovell than Elberta, from what we know of the two. The old Crawford is also showing up well of late. But why not take a place in the up-to-date peach procession and grow some fine yellow clings? They are best of all for both canning and drying. Read the list of clings for canning printed on page 405 of our issue of December 29. The Tuskena, Orange and Phillips are far apart in ripening and would make a fine set of three. The safest apricot is the Royal, with Blenheim as a good second. Almonds vary widely in habit with locality. Unless you are pretty sure of your region, it is not safe to plant any. Corning makes a good showing with the olive, as we saw at a recent visit. We have seen no place with more promise, but we are a little shaky on the olive anywhere.

Grafting Prunes.

To THE EDITOR:—Can Silver prunes be grafted on a peach root, or on an almond root? Where is the best place to get Sugar prunes from, and will they do well here in Sacramento valley? Is beeswax good for grafting fruit trees, and is it good to graft French prunes to peach root?—READER, Red Bluff.

Silver prunes can be budded or grafted on peach stock, but in grafting on peach extra care has to be taken to fit the scion well and to wax carefully, as the peach bark shrinks back badly. We are not sure about Silver prunes on the almond. Sugar prune trees or grafting wood can be had from any nurseryman. The full success of this variety has still to be determined. Enough success has been had in the Sacramento valley to lead many growers to plant it largely this year. It may be expected to do well wherever the French prune succeeds. Beeswax alone will not do for grafting work; it is too soft and liable to melting and running. The following is a good wax: Two pounds resin, one pound beeswax, two and one-half pounds linseed oil, four tablespoonfuls turpentine. The French prune does well on peach stock if the soil suits the peach.

Packing Oranges for Keeping.

To THE EDITOR:—What is the best method of packing oranges to keep for five or six months.—READER, Modesto.

There is no packing of oranges to keep for several months. The only keeping that is practiced to our knowledge is cold storage for commercial purposes, and there is very little of that, because the orange can be picked and marketed from the trees nearly the whole year by growing a few varieties with a slight difference in their ripening seasons. Lemons are kept for several months to give them acceptable condition for marketing and to carry them into the warm season when most lemons are used. It is different with oranges, for few of them are wanted when the summer's fruits are to be had.

The Climax Plum.

To THE EDITOR:—Is it advisable to plant Climax plum trees where the Clyman, Botan and Tradegy do well? Does the Climax plum crack enough to render it worthless as a shipper? The past season how was it received in the East? How does it compare with the Sultan?—MANY FRUIT GROWERS, Placer county.

We have not the data for peremptory reply to these queries. We have heard of objections to the Climax, but do not know how serious they are. We hope experienced readers will give us at once for publication the results of their experience along the lines indicated.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Jan. 2, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.28	20.43	28 01	17.09	34	56
Red Bluff	.00	8.71	12.10	10.58	24	62
Sacramento	.00	7 68	10.25	7.72	26	56
San Francisco	.01	7.23	11.13	9.31	37	62
Fresno	.00	5.43	4.73	3 61	28	56
Independence	.00	2.27	1.73	2.31	12	58
San Luis Obispo	.00	8.92	10 41	5.47	24	66
Los Angeles	.00	6 79	3 40	6 58	36	70
San Diego	.00	1.73	1 93	3 34	44	68
Yuma	.00	.02	.58	1 71	32	74

HORTICULTURE.

Root System in the Orange Orchard.

By J. H. Reed at the University Farmers' Club Institute at Riverside.

The subject assigned me is the Root System in the Orange Orchard, as Affected by Irrigation, Cultivation and Fertilization. We are pretty well agreed as to the best management of the orange tree above ground, but of the vital organs below upon which depend almost the entire development of this superstructure and the maturing of its product, there is yet much to learn. Especially is this true of their best relative location, the forces that secure them in this location and ensure them to the highest activity in furnishing nutriment.

Lateral Distribution.—First: As to the lateral extent and distribution of the orange tree roots, there are frequent erroneous opinions. Even some generally intelligent orchardists seem to have the notion that the roots naturally occupy but a limited space about the tree. I am frequently suprised to see them placing fertilizers immediately about the trunk, even after the tree is three or four years old. This method tends to keep the roots restricted, while their nature is to push out in search of the native food in the soil. I have traced the young leaders of an orange tree, but eight months from planting, over 6 feet away: and of trees less than eighteen months old, 14 feet from the trunk. The sometimes quoted rule that the lateral spread of the roots corresponds with the spread of branches, is quite wrong and expensively misleading. Another frequent mistake is in judging of the length and importance of a root by its size at a given point. A gentleman digging a deep trench through an orchard recently assured me that no harm was being done, as "not a root was cut larger than your finger." Had he realized that a root no larger than a pipe stem at the point of severance might have been carrying nutriment gathered by thousands of rootlets from many yards away, it would have been a grave necessity that would have forced his consent to cause such mischief.

Deep Rooting.—Second: After starting the young tree properly, nature needs but little help in managing the branch system, especially of the navel orange. The root system developing in a sterner medium and modified by so many conditions, needs the most intelligent and watchful help to secure the best results. After watching the great and seemingly increasing disparity in the growth and production of our orange orchards for ten years, in the light of recent investigations, I am of the opinion that the lack of accurate knowledge of the root system of our orange groves, and if intelligent, trained service in its development and in bringing out its capabilities, costs Riverside valley alone not less than a quarter of a million dollars per annum. I hope you will not accuse me of exaggeration till you have given the matter careful study. Not only that, but I am confident that the radically erroneous conditions on which many of our orchards are being built will result in even more serious loss as they grow older.

California Soils.—Our California soils as a rule, unlike most soils in the East, have a depth of many feet, available for plant use. The great value of this fact is obvious, but in practice is largely ignored. Our chemists tell us that our subsoils are rich in the principal mineral ingredients of the fertility our orange trees must need, and our experience corroborates this teaching. Yet we make little effort to avail ourselves of these vast stores so near at hand, but go on buying the material at high cost.

From his first examinations, Dr. Hilgard has insisted that there was sufficient potash and phosphoric acid in most of our orange soils for present needs. This position has been combated with no little sharpness, especially by those interested in supplying these materials in commercial fertilizers, and sometimes gravely doubted by orchardists who have found lagging trees respond readily to the application of these elements in commercial fertilizers. The explanation, it seems to me, is readily found in the fact that the roots of our trees have been so trained as to use but a fraction of the actually available stock in the soil, and when this small proportion is exhausted, the balance being out of reach, artificial applications must be resorted to.

In this connection, I want to say that I think the position taken by Dr. Hilgard and other specialists holding similar views has been misunderstood. In claiming that there are sufficient of these ingredients for present use, they have in mind fairly good growth and ordinary fruitage, not the intense production insisted upon by our southern California orange growers, which requires rich plant food in addition to what would commonly be considered an abundant natural supply. Illustrating the capabilities of our subsoils when kept well moistened, I have a nine-year-old orange tree in the back yard, quite out of place, because I love trees as I do animals, and it hurts me to see one dug out as it does to see an animal killed. So it has been allowed to stand quite in the way and where there is no possibility of ordinary irrigation or culture. The ground around it has been constantly packed and trodden ever since it was two or three years old. It has received abundance of water through a single narrow hole near it, but no fertilizer. While the growth of the tree has not been so great nor the fruit as abundant as in the orchard near by, it has maintained a constant growth with thick, dark, healthy foliage, and regular crops of good fruit in fair amount, in spite of hard usage it necessarily meets in such an exposed place. No foot of ground has been moved for years within 20 feet, and no fertilizer used within 40 feet of the tree. It seems to me this gives clear proof of an abundant supply of native fertilizers in the subsoil. All of us probably know of orchards having most thorough irrigation and cultivation, but little or no fertilizing, which are fully as large producers as other orchards in same soil, receiving heavy fertilization but less perfect care.

Shallow Rooting.—I have made a somewhat extended study of this matter of deep and shallow rooting during the past two or three years, with the result that to my mind the most serious mistake now being made in our orchards is the unconscious encouragement of shallow rooting. I regret that I have not photographs of perpendicular sections of sides of excavations showing the exact relative location of the principal root strata, as I have found it, as those of you who have not given the matter special attention will scarcely credit my statements. In a large orchard thirteen or fourteen years old, in which a deep trench was cut, some 60 rods in length, I found the thick mass of roots permeating every foot of ground laterally, but within 12 to 14 inches of the surface. Scarcely a root was found below 16 inches. This orchard has received fairly good care in irrigation and cultivation, and of late, at least, considerable fertilizing. But it has been disappointing in both tree growth and production of fruit, the reason for which had perplexed me as well as others conversant with it. But it seems to me now that the location of the main body of roots is sufficient of itself to explain the whole matter. I have found this shallow rooting in many instances examined, and think it fairly indicates the condition in many orchards whose owners wonder what is the matter.

In other instances I have found the roots quite generally through the entire mass from 2 to 5 feet in depth. I was recently much interested in watching the excavation for a cellar in a vigorous young orchard, where I knew the irrigation and cultivation had been especially thorough from the first. Every foot was permeated with roots. At the very bottom—some four feet—I could scarcely find a handful of earth not filled with fibrous roots, and on digging 10 or 12 inches below the bottom I found them in abundance. With continued deep irrigation, I think it would be difficult to overestimate the advantage this orchard will have in the future over the one described above.

Hardpan.—A striking illustration of the effect of shallow rooting as trees grow older I found but a few days ago in one of the best orchards in our valley. The trees are nine years old; have had the best treatment and have been remarkably productive, and, in spite of enormous crops, the trees are in splendid condition. Recently three or four have shown signs of something wrong. The foliage is not so abundant, lighter color; fruit smaller, and on one distinctly poor in quality. On examination, solid hardpan was found from 2 to 2½ feet below the surface under the limited space occupied by these affected trees. Deep irrigation and cultivation with abundant fertilizing had kept up the growth of tree, and heavy bearing, for years, but the limitation of this hardpan now begins to tell in spite of the best treatment.

I think we have here an excellent illustration of one of the principal causes of decadence of many older orchards, which led some to think the Navel a short-lived tree till Mr. Holmes, in his recent able article showed conclusively that this decadence could not be caused by age. Not that the cause is often in underlying hardpan, but in the deeper sub-soils being left unfitted for root penetration by lack of moisture. Doubtless shallow rooting within certain limits, with best of treatment, may produce excellent results for several years. In fact, it has the advantage of more quickly responding to generous application of fertilizers for obvious reasons; but I think most of you will agree that sooner or later most serious results must follow, while shallowed-rooted orchards receiving but ordinary care and little fertilizer show the effect of much earlier age.

How to Get Deeper Roots.—Now, if I have not overestimated the seriousness of this matter, it seems to me that one of the most important present problems in orchard management is how to secure deeper rooting. Theory is of little value, except backed by actual experiences, sufficient in number, breadth and accuracy from which to generalize. Hence, I shall refer largely to personal experience and observation. Commencing with planting, there is little difficulty in securing deep rooting. In our more recent plantings we have succeeded in getting the roots started well down by first breaking up the entire ground as deep as can be done by an ordinary plow—an actual depth of 10 to 12 inches. Were I to plant again, I would loosen the earth still deeper with a subsoil plow. My son, visiting the orange districts of Italy the past summer, found workmen preparing for planting orange groves, loosening the soil by hand to a depth of 4 or 5 feet. The deep rooting induced by this practice, I think, explains not only the longevity and fair production of their trees in that country, but how they are enabled to raise masses of vegetables in their thickly-set orange groves. Deep rooting depends upon our ability of maintaining a considerably saturated subsoil. It has been thoroughly demonstrated that this may be done by deep furrows, long running of water, covering—not cultivating—the saturated furrows as soon as possible after water is taken off, and keeping the surface to a considerable depth thoroughly pulverized until the next irrigation. Were great economy of water necessary, it may be best to resort to some of the methods of placing the water immediately in the subsoil. But where water is abundant, as here, and, according to my experience, with much less than one-fifth of an inch per acre, deep irrigation may be easily secured by the common surface method. In older orchards, on adobe soil, where continuous shallow irrigation and cultivation and surface application of fertilizers have kept the roots nearer the surface, difficulty will be found in forcing them down. But I think that it has been amply demonstrated that it can be gradually done. Some time ago a lady came into possession of an orchard in our valley. The trees were not satisfactory, and, on examination, the roots were found too near the surface. She asked Dr. Hilgard what she had best do. He advised deep plowing to commence with, remarking that it would be heroic treatment, requiring much nerve to have thoroughly done, but he knew of no other that would accomplish the desired object. She had the deep plowing done. Recently she wrote the Doctor that, while it was terrible to see the thick roots torn up, the result was most satisfactory. I was in the orchard a few days ago. Stubs of roots 1 inch or more in diameter were sticking out all over the field, but the orchard is in a most vigorous condition. Of course, this remedy may be carried to such extremes that the damage may be greater than the gain. But I am fully persuaded from what I have seen that this surface root pruning by deep plowing may be done in such judicious manner as to result in great benefit to orchards with roots too near the surface; and I know of no practical substitute for the heroic treatment.

With these surface roots out of the way, and the ground well broken up, the furrowing plow can be forced well down, putting the water where it is needed. It is claimed by some that deep furrows can not be made in stiff adobe soils. They can not be by using three dull shovels on a furrower. We find in even looser soils it is usually better to use but two, and they should be sharp and of proper shape. If for any reason two can not be forced to the desired depth, we resort to the single shovel. The matter of little extra time in furrowing is insignificant compared to getting to the desired depth.

Irrigation.—I need not dwell upon the importance of longer running of water. It is obvious that the longer it runs the deeper it penetrates. Here in Riverside, where we have an inch to five acres, the practice is becoming common to run on ten acres say 20 inches three days each month in place of 30 inches two days, as formerly. Some, who have not given the matter thorough test, insist that 20 inches can not be made to cover ten acres. When the subsoil is allowed to become dried out before irrigation, there will be trouble in this, but when once well wetted, and the moisture kept down by thorough cultivation, there is no difficulty. In fact, during the heated term of last summer, we used but from 15 to 18 inches during three days on fifteen acres, in place of 30 inches due us. Of course, the character of the soil has something to do in the case, but not nearly so much as the manner of using the water and keeping it in the ground. The value of long running has been most markedly demostrated on a series of terraces on a steep side hill. They are seven terraces about three-fourths of a mile in length, each enough to make the test of some value. They traverse various sorts of soils, and in several places the pick had to be used in setting the trees. The terraces were planned for two furrows, but unexpected growth of trees has obliged us to abandon the outside furrow, and for the past year have run water in but the single inside furrow four consecutive days each month, with a result that has been a constant surprise to me. Not only the three and four year old orange and lemon trees were loaded with fruit, and have shown no sign of lack of moisture, but by actual test, the terraces have been found full of moisture to a depth of several feet, penetrating stubborn hardpan, followed by the fine, fibrous roots. Cultivation has but a secondary effect upon the roots. The more perfectly all the earth above them is kept finely pulverized and loose, the more perfectly evaporation is stopped and the subsoil kept in condition for deep rooting.

Fertilizers.—The influence of fertilizers upon the roots is direct and important. If rich food is put nearer the surface, it works down but gradually, and in the meantime the upper fibrous roots push up to meet it. We have a distinct illustration of this in our lemon orchard. Heretofore we have put on our commercial fertilizers broadcast and plowed it under, and have had but few fibrous roots to cut at the next plowing. Last August we put the fertilizer in with the drill, putting it down as deep as possible. But in spite of deep cultivation in the meantime, we have

a dense, continuous mass of fibrous roots to cut in plowing—showing, at least, a vast deal of wasted energy. Hereafter, we shall distribute the fertilizer with the drill on the surface and plow it under.

HARDPAN.—A word as to the much discussed irrigating hardpan or plow sole. After most careful study and observation, I am more persuaded than ever that with deep annual surface root pruning with the walking plow (I do not think ordinary gang plows should be used in the orchard) and persistent deep irrigation and cultivation, this artificial hardpan will disappear.

Now, if it be true that one of the principal reasons why there are hundreds of acres of orange orchards producing but from one to two hundred boxes per acre, while others under same natural conditions are yielding three times that amount, is because by shallow irrigation and cultivation, the main root bed is between 6 and 20 inches of the surface, while it should be between 10 and 60 inches, and if it is practicable to secure this greater depth, it seems to me to be a matter well worthy of our serious attention, and I hope it may receive special consideration by our clubs during the coming year.

METEOROLOGICAL.

Annual Review of Weather and Crops.

By A. G. McADIE, Section Director U. S. Weather Bureau, San Francisco.

The year opened with a fair quantity of rain in the central and northern portions of the State, but a scant rainfall in southern California. One of the most noticeable features of the first six weeks was the prevalence of tule fog in nearly all the valleys north of the Tehachapi. There was also more cloudiness and fog than usual in the south. This continued foggy weather kept the soil in such a moist condition that all farming operations were seriously retarded. As an offset to this delay, however, there were no drying winds, and consequently the lack of rainfall was less injurious than it would otherwise have been. Almonds were in bloom by the end of January, and early-sown grain was in very good condition, with every indication of a large crop. Conditions were very favorable for maturing oranges in southern California, and the fruit was gathered and shipped in large quantities. There were some heavy frosts during the month, but the damage done thereby as a rule was small. The deficiency in rainfall for the whole State for the month of January exceeded one inch.

By the middle of February conditions had been generally favorable for all deciduous fruits, but the absence of sufficient rainfall, especially in southern California, caused considerable apprehension among farmers. In many places the grain continued in good condition, but in southern California the continued dry weather, accompanied by high winds, caused the grain to turn yellow, and the prospect of a good crop was discouraging. Citrus fruit trees continued in good condition. The correspondent at San Diego stated that the seasonal rainfall in that section had been less than in any season since 1876. The rainfall deficiency for the State exceeded two inches during February. Apricots, peaches and Japanese prunes were blooming, and the trees were heavily laden.

March brought nearly normal temperatures, with heavy rainfall on the 3d and 4th, distributed generally throughout the State. It may not be out of place to state that in a large degree the crops of California depend rather more upon a timely distribution of rain in the spring months than upon the amount of rain in the winter. The March rains were of great benefit to late sown wheat, and materially improved the condition of barley and hay. Deciduous fruits continued in good condition, with the prospect of early maturity and a heavy yield. Before the end of March cherries were in bloom in the vicinity of Vacaville, and grape vines had commenced leafing. Almonds successfully withstood the light frosts of the season. In southern California only were prospects discouraging. In the southern interior counties in many cases grain and hay were beyond redemption.

During April the central and northern portions of the State received sufficient rain, but it was not until the end of the month that the rainfall in the southern portion was sufficiently heavy to be of much benefit to agriculturists. There were some heavy frosts during April, with a slight injury to grape vines and tree fruits, but on the whole deciduous fruits came through without much damage. In April the rainfall exceeded the normal amount by nearly two inches.

The first car of new wheat was received at Port Costa from Kern county on May 11th, which is the earliest harvesting of wheat recorded in this State for forty years. The first carload of barley was shipped from San Joaquin county on the 16th. The month of May had a few more showers than usual, favoring all crops. Haying was general, and baling had commenced in many places. At the close of the month the yield of wheat and barley in nearly all sections north of Tehachapi was above average and the quality excellent.

There were no serious northers in the great valleys of California during the month of June. Near the end of the month, in portions of the Sacramento valley and in some of the northern Coast counties, showers slightly injured hay and ripe fruit. The second crop of alfalfa was nearly ready for cutting. Hops were in excellent condition, and corn, potatoes and vegetables were thrifty. Grapes made favorable progress. Oranges, olives, walnuts and melons were in good condition. Large quantities of apricots and peaches were sent to the markets and the canneries. Almonds showed far less injury from frost than had been expected. Prunes also were not so seriously injured by late frosts as had been anticipated.

A severe norther in portions of the Sacramento valley at the beginning of July caused some damage to wheat and ripe fruit, but with this exception conditions were most favorable for all crops. Trees in the central and northern portions of the State were heavily laden with peaches, pears and prunes. The yield of apricots was larger than expected, while grapes, oranges, olives and walnuts were abundant. Potato blight seriously affected the crop in Humboldt county. By the end of July most of the grain had been harvested and large quantities of fruit picked. The yield of wheat was disappointing in all sections, and the shortage was accounted for in various ways in different places. In the Sacramento and San Joaquin valleys the heavy spring rains materially decreased the acreage sown; in other sections an insect attacked the roots of the plants, reducing the sap in the stalks and injuring the grain. Reports, however, from the great grain centers showed that wheat was excellent in quality.

During August irrigation water was scarce in portions of southern California, but in other sections there was no scarcity. Raisin grapes were in excellent condition throughout the San Joaquin valley. Wheat harvesting and threshing were completed, and before the end of the month most of the prunes had been picked. Grape picking was in progress in nearly all parts of the State, with fruit of excellent quality and a fair yield.

September was in the main cool and pleasant, but toward the end of the month warm, dry weather prevailed, with abnormally high temperatures in the central and northern portions of the State. Seeding summer-fallow began in some places. The sugar beet crop was a light one. A dry period at this time of the year is generally followed by excessive forest fires, and several of these were reported about the end of September.

October was most favorable for fruit drying and raisin making. The raisin crop was larger and better than had been expected. Wine grapes yielded a large crop. Showers about the middle of the month would have done damage except for the timely warnings which were given. Fruit drying and raisin making were nearly completed, and late grapes were gathered. Plowing and seeding progressed rapidly in most sections, and farmers were making ready for an unusually large acreage of grain. Oranges were ripe in many localities, and the first carload was shipped east from Porterville October 26th.

During November the rainfall exceeded the normal by nearly three inches. The storm of the 17th, 18th and 19th gave the heaviest rainfall of the season, and in some sections the heaviest for several years. It was accompanied by thunder and lightning in San Francisco, Oakland, Los Angeles and other places, but no material damage resulted. There was a heavy snowfall in the mountains; in all portions of the State the generous rainfall removed apprehension of a dry season. High winds and abnormally heavy rainfall in some sections damaged fruit trees and vegetable fields. On the 21st and 22d the rainfall amounted to from three to six inches at many stations.

The first half of December was dry, and there was sufficient sunshine, accompanied by favorable winds, to make the soil fit for plowing and cultivating. Early sown grain was up and making fair growth. Dense fogs prevailed in all the valleys of California north of the Tehachapi for about three weeks, which served to retain the moisture in the ground.

THE POULTRY YARD.

Hatching and Brooding.

TO THE EDITOR:—During this and next month many incubators will be running and poultry men will be very busy. There are many incentives to increased activity in the industry this season. The principal one is that there will be a great demand for eggs. It is impossible to overstock the market. As for broiler raising, while there may not be as great inducement to embark extensively in this branch of the business, those persons who have early hatches will undoubtedly receive, at least, fair prices for their chicks next spring. But as long as large shipments are constantly made from the East, poultry for the table will not bring the fancy prices people of our State received a decade and more ago.

It has been clearly demonstrated that there is good money to be made in the raising of poultry here in California, as in the East, and the industry is enlarging year by year. This will continue for years to come. As our people become better acquainted with the business, learn to carefully observe the numerous details that daily present themselves, pay the same strict attention to matters that is required in the successful management of any business attended with profit, they will make more money and success will attend them all along the line.

THE INCUBATOR.—There are many persons this season, and the number is increasing continually, who are thinking of substituting the incubator for the hen in hatching their chickens. That there is a wonderful demand for incubators is evidenced by the very many different makes placed upon the market in all sections of the country. Not every one who uses the incubator for the first time is successful. Not a few, after spending a goodly sum for machines, give up entirely and return to the old method. Sometimes there is cause for non-success, for not all incubators are just what they ought to be. Some are made to sell, apparently; some are made for good service.

Once a good machine is obtained, and the poultryman is careful to follow instructions, he will rejoice to be emancipated from the old-time fussing, annoyance and drudgery. The principles of incubation mastered, a good machine obtained, and there is little cause for worry after the eggs are placed on the trays. The only labor for the three weeks of waiting is to fill and trim the lamp and to turn the eggs. Not many farmers use incubators. Those who do not would be surprised at the satisfaction they would have did they, in this way, keep up with the times.

But poultry raising, in all its details, requires patience, care and perseverance. The man—the novice—who gives up because the expected and coveted success does not fall to his lot at the very first will not, cannot, succeed in any business.

BROODERS.—A good many chickens are hatched under hens and raised in brooders. Those who pursue this method are well satisfied, oftentimes. There are many points in its favor. Of course, the main point is to have a good brooder. There are many patterns on the market. One has a great variety to choose from. But it is not every one who cares to invest five or ten dollars in a brooder, especially when two or more are required. For it must be well borne in mind that, though it may be an easy matter to hatch chickens, and in large numbers, adequate provision for their after care must be made beforehand. For lack of this scores, yes, hundreds, of the little ones are lost yearly.

There are different patterns of home-made brooders that any man handy with tools can readily construct. Some are made to use hot water for their warming, others use hot air. A cheaply constructed brooder, one that is used by not a few persons in this locality, is the Meredith brooder. It has been used for two or three years, possibly longer, and is no experiment. It is not patented and the originator willingly gives to all interested parties any needed information.

The brooder is a box four feet long, two feet wide and ten inches high. The cover is made in halves, attached to the upper edges of the box by small hinges. For the heater take a common five-gallon coal oil can, cut out the bottom close to the edge, trim off one inch on all the four sides and fasten it with short pieces of tin, bent in the shape of an elbow, to the can, two inches from the top. Two small rivets to each bracket answers the purpose. To the top of the can solder a tin tube, one-half inch in diameter and four inches long, which projects above the brooder cover two inches. It must stand on legs at least eighteen inches high.

In the center of the floor of the brooder box cut a hole just the size of the can, which must fit snuggly. Half of the can will be in the box, half below. Around the upper half place a layer of thick, or medium thick, flannel. If the little chicks become at all cool they will huddle up around the heater. If they are warm enough they will scratch for their food in the sand and chaff at some distance from the flannel-covered can.

Commence at the lower right hand corner of the can and cut upward five inches; then cut across the can the whole width. This piece can be turned back for a door to admit the lamp, which sets upon a box two inches high.

Take two pieces of wood, one inch square, two feet long. On one side of each piece tack pieces of felt or thick cloth. Slit them from the bottom upward three or four inches. Place them in the brooder box, five inches from the can, and one inch above it, one on each side of the can. Place three sticks across the top of these and over them tack thick cloth for a cover.

Around the bottom of the can place a jacket to keep in the heat that would otherwise escape. Said jacket is the three sides of a wooden box—no top or bottom. Make it to fit aroumd the can snugly. Let the two ends be a little longer than the can is wide. On these ends nail narrow pieces of wood so that the fourth side of the box can fit in and be kept in place by the slender cleats. This board can easily be sprung in place when one looks after the lamp.

On the top of one or both covers, or doors, insert

panes of window glass to admit light into the brooder. The chicks can stay in the lower apartment of the incubator two or three or even four days before placing them in the brooder. Do not be in a hurry to remove them. At first keep the temperature of the brooder at 85% or 90% degrees, gradally lowering it as the chickens get older. Keep them warm, but do not pamper them.

The cost of this brooder should not be over one and a half dollars. The brooder lamp is placed beneath the can, and the heat ascending, strikes the false top. The smoke and all bad fumes escape through the tin tube.

Openings for ventilation are made at two upper, diagonal corners. A suitable door, on a level with the floor of the box, is made for the exit of the chicks when they are a few days old. An inclined, slatted board extends from this to the floor of the brooder house. Put sides on this inclined board six inches high, also an end. Hinge it to the brooder, attach it to the box with wires, with the hooks and staples to keep it on a level, and in this the chicks may run when too young to be allowed on the floor, be it of wood or earth. The end of this runway is hinged to the bottom and held in position by hooks and staples. Keep a tall dish of water in the brooder to furnish moisture. Cover the bottom of the box with a thin layer of sharp sand, over which place clean chaff. In this scatter pin-head oatmeal, millet seed or bread crumbs, a little at a time and often. The chicks will very soon begin to scratch for their living, will grow strong and there will be no danger of leg weakness.

The Menu in the Brooder.—Supply a liberal quantity of finely broken glass at the very first. Also keep a dish of powdered, or small bits of charcoal in the box. Give nothing to drink for the first two or three days, and then supply sweet milk. Feed, dry stale bread crumbs, moistened with milk squeezed perfectly dry at the first, then rolled oats, or pin-head oatmeal, for two weeks or more. Make a cake of finely ground cornmeal, in which put chicken grit, a little powdered charcoal and, at the first only, a little meat meal. This is to be fed after one or two weeks. Do not feed any sloppy food. Keep the chicks warm and busy and they are bound to grow. A. Warren Robinson.

Napa, Cal., Dec. 26, 1900.

Chloroforming Chickens.

A new wrinkle has developed in chicken thievery around Nordhoff, Ventura county, according to the Ojai. For a few weeks a number of citizens have been losing their fowls in the dark hours of night, and have been unable to account for their noiseless abstraction from the coops. Among the losers are the Warner brothers, who originally had more than sixty chickens, which have disappeared in bunches until now they have but one poor solitary chicken left. The last haul of their fowl was seventeen. Mr. Bailey, Mrs. Deline, Mr. Kimball and a number of others are minus many of their birds.

The chickens are simply chloroformed and appropriated. It is a novel scheme, and works exceedingly well. The chickens not gathered in show the effects of the chloroform for a couple of days after its administration and go tottering around the yard with unseemly abandon, after the manner of intoxicated persons. They become real roguish and attempt freak feats. One demure female chicken fell off a fence and landed on her back. Then she got her back up and went into the kitchen and hopped up on the rim of a dishpan in which water was being heated and attempted to balance on one leg, only to topple overboard, with the result that she nearly drowned, being saved from scalding to death only because the water was not yet hot enough to do the work. A few hours later this same hen was seen perched upon the head of a horse and trying to pick the hairs out of his ears. The horse shook his head and the hen fell off into the manger and went to sleep just like an old soak.

The lone chicken of the Warners did not become hilarious. She was ashamed of her intoxicated condition and perched herself on top of the barn. No matter how often she was driven off, she would stagger back to that position and brood and mope like one who keenly felt the disgrace of a jag.

Petty thievery was prevalent last year until the adroit culprit Briggs was sent up for six months. It is supposed that the present operators purchase their chloroform in Los Angeles and by devious ways take their plunder to that city for disposal; the booty is not confined to chickens.

THE FIELD.

Corn Culture.

At the twenty-ninth annual meeting of the Kansas Board of Agriculture, Mr. J. C. Norton, of Allen county, in that State, presented a comprehensive and instructive paper on the "Treatment and Use of the Corn Plant," which will be interesting to our readers as showing up-to-date practice in the great corn belt. Condensed by Secretary F. D. Coburn, the article is as follows:

I usually list two years and plow the third year. Two years' listing, and the gradual filling up of the trenches with fine, dry earth, make the soil thoroughly well pulverized and easily put in good condition by the plow. Listing gives uniformity to the crop, but the way ground is usually plowed does not, and I have adopted another method.

I first double disk the field, having the center of the disk straddle each stalk row, pulverizing the top 4 inches, incorporating the vegetable matter into the surface of the soil; then I float or plank this with what is commonly known as a clod-crusher, which is a wooden implement made of eight 4x4-inch timbers set edgewise and 1 inch apart. I then plow with a plow that shifts this fine soil into the bottom of the furrow and screens out all the particles of soil larger than 1 inch in diameter.

It is a right-hand steel-beam plow with rolling cutter. The share is rather straight across and cuts 16 inches. The first moldboard is of rods set 4 inches apart, and carries all clods over 4 inches thick rather straight up, then to one side, finally dropping or tossing them bottom side up 24 inches away from the cutter. The second set of rods throws out to one side all clods over 2 inches thick, in a neat row 20 inches from the cutter, while a third set of rods drag along in the bottom of the furrow and their upturned ends claw out and leave on top of the fine earth in the furrow all clods thicker than 1 inch that may have dropped through the two moldboards.

A little subsoiler under the plow breaks up the bottom of the furrow, and the trash lies on top of the fine soil in the furrow where the clods from the next furrow are thrown on top of it. The field is then subpacked with the Imperial pulverizer, and all surplus air is forced out of the soil, the trash pressed into the soil, and all clods reduced to the size of a walnut. Thus the whole field is a pulverized mass of compressed fine soil. This pulverizer cuts 8 feet in width and weighs 1200 pounds, having two rows of shells, twenty-six on one roll and twenty-seven on the other. It rolls, packs, pulverizes, harrows, smooths and levels, all at one motion.

This plow throws out millions of hoof-prints made by the large horses in floating and plowing, and the sight of these rows of clods has caused me to discard my modern two-horse corn planter, as the horses always travel ahead of the knives and directly on the corn row.

I have now put a tongue into a one-horse planter, so that two horses can draw it and straddle the row. I have also put on an axle and two planter wheels, so that I can ride, and the axle makes a perfect gauge for the planter knife, which is set to enter the soil just 2 inches below the two gauge wheels, which are put wide apart, and each one in turn acts as a marker for the next row, and also as a follower for the last row planted.

Bolted on the planter knife and set to cut ½ inch deep is a little lister that throws out a trench 6 inches wide and ½ inch deep, or just the width of the corn-planter wheel, thus throwing all small weeds and seeds 3 inches away from the corn row and where the harrow or weeder annihilates them.

The proper time to cut up the corn is as soon as the kernels glaze or dent and while the stalks and leaves are still green and full of sap. Corn should never be cut up only on a bright, clear day, or on such a day as it is good to cure hay in.

Two men should work together, and the shocks should be started on a jack, which is made by putting two legs, well braced together, near one end of a 10-foot scantling, and having an auger hole near the upper end for a broom handle. As soon as four armfuls are set up against the jack the shock should be loosely tied with a stalk and the jack removed. In commencing, each cutter should take two rows, and all the shocks should be started that the cutters expect to cut during the day, so that when they again start in the shock has wilted and cured out all that is possible. They should now take only one row each and cut from shock to shock, making each armful go half way around the shock, in order to allow it to wilt and cure out. After they have cut clear through, they should again go back to the beginning and cut another row each, continuing this until the shock row is completed, always having in mind the perfect curing of the corn.

The shocks should not be violently compressed, as is the usual practice, but loosely tied with a cornstalk to prevent the outside stalks blowing down. An average shock that weighs 300 pounds when cured will weigh 1000 to 1200 pounds when green; and who is there who would put in a shock 1200 pounds of green grass and expect it to cure out perfectly, especially if heavily weighted? Any one knows better than to do this; so why treat a corn shock that way? Just as sure as a green corn shock is tied up tight, without any chance to cure out, just so sure will a chemical change take place that unfits it for feed, even if it does not turn black or moldy. A pile of green grass treated this way would heat and "mow burn" and come out black and musty, and be only fit for bedding, as all digestible matter would have been destroyed by the heating. I have seen lots of corn fodder come out dark and spotted from this cause, and if it looks bright a close scrutiny with a powerful glass will show that it has passed through this chemical change, that causes cattle to smell it all over before they taste of it, while properly cured corn fodder will have a sugary odor that the cattle smell long before they reach and eagerly devour it.

To avoid this chemical change in newly cut corn fodder, green, most farmers delay cutting until the leaves on the stalk have cured out standing, and thereby secure a very poor grade of fodder.

Squirrel Poisoning.

To the Editor:—I wish to state my experience in killing squirrels with strychnine oranges. Take culls or oranges and cut into them, from toward the stem to the blossom end, about 1½ inches long, and insert a liberal quantity of powdered strychnine, then pinch the cut close together and place them in a basket to distribute. If cattle can get to them, roll them down the squirrel holes. The victim may not touch the bait for a week, but the oil keeps the poison from evaporating and the acid cuts it, and he may begin on the opposite side from the cut; but he gets to the strength of it in time and leaves enough for three or four more to go the same road. Now there are some peculiar facts about this. The squirrel will peel the orange and leave it in fragments where, if it were eaten, it might save him through the oil it contains, while the oil preserves the poison in the orange and it makes no difference if the orange dries up, it is still effectual. I have tried this thoroughly and given oranges to neighbors who had almost fattened their pests on poisoned pumpkin seed, corn and other things, and the verdict of those who used them is "they are best." Get some "cull" oranges and try them and be convinced.

I wish to add that the man who kills a cat in or around an alfalfa field should be sentenced to ten years hard labor. J. C. Thompson.

Perkins, Sacramento county.

Prize Wheat from Livermore.

Shelby Martin of the Union Bank of Oakland has received the gold medal awarded at the Paris Exposition for the finest wheat exhibited. The wheat shown was from the Martin ranch, near Livermore, the exhibit being made in the name of Thomas Carneal. The winning of the "grand prix" by California wheat over all competitors is considered by Martin a great victory for this State. The medal, a beautiful gold affair, is greatly prized by him and has been admired by his numerous friends.

THE VINEYARD.

Resistant Vines in the San Joaquin.

Frank A. West of the well-known Stockton grape growing and wine-making firm, West & Son, has furnished for publication in the Mail the following advice to those contemplating the starting of vineyards in that vicinity:

So much interest is now being taken in viticulture throughout this coast that the question of planting resistant or non-resistant vines is one which is constantly being discussed. The phylloxera is so widely scattered and so much damage has already been done around Stockton that it is folly to plant anything but resistant vines on lands not under either the Stanislaus or Woodbridge canals. The cost of planting and grafting a resistant vineyard exceeds, of course, that of planting one of non-resistant vines. One has also to face the loss of another year's time, but this loss of time and money is more than offset by the assurance of permanency of investment.

The varieties most desirable are the Rupestris, St. George and Martin. The Riparia and Lenoir also do well, as has been demonstrated by Henry Armbrust, although I believe Mr. Armbrust prefers the Riparia, from which he has had excellent results.

We have all these varieties on this property, but the vines already grafted were planted by the late William B. West and I am not at all sure what varieties were used as the resistant stock. The Lenoir has done well at the Bishop vineyard, now owned by Mr. Walsh, and could very likely be grown profitably to a certain extent without grafting. Resistant cuttings are expensive this year, but will undoubtedly be cheaper next season.

Under the two canals one is perhaps justified in planting the ordinary varieties and taking the chance that flooding will sufficiently check the vine disease, if it should appear.

As for varieties to be planted, it is safest for one to plant those most prolific in his own immediate neighborhood. Color is deficient through this county and it would be well to plant more of the Petit Boushet, Tannat and Verdot, all of which do well here.

I would advise against the indiscriminate planting of the Zinfandel. In years of abundant crops it is low in sugar, deficient in color and more subject to mildew and black rot than any other variety.

In a general way it is safe to assume that the business of growing grapes will be as profitable in the future as it has been in the past, and in the past there have been few years when vineyards did not pay a profit.

Agricultural Review.

BUTTE.

PLANTING OLIVE TREES. — Oroville Register: Hon. J. M. Ward, who has had many years experience in planting olive and orange trees and who owns a fine grove of orange trees, calls our attention to the manner in which too many plant their trees. He says the holes are too shallow and the olive does not get its roots down deep enough below the hard crust of top earth. He believes that the holes where an olive tree is set should be at least 5 feet deep. He planted an orange tree in his yard, digging the hole fully 6 feet deep. The tree did not require one-half the irrigation that his other trees did. In the grove south of town a row of trees set near the railroad were set in holes too shallow, and they have not done nearly so well as another lot of trees set in the same orchard where the holes were dug deep.

BIGGS ORANGES.—Biggs Argus, Dec. 28: Navel oranges are on exhibition here, measuring 13 and 14 inches in diameter, the fruit having been raised in this vicinity by H. S. Brink, C. A. Robinson and Chas. Welkerson. There are also on exhibition Jappa, Selecta, Navels, Malta Blood, Bidwell Bar Seedling (budded) and an excellent quality of the Japanese variety called the Kid Glove—all raised here by C. A. Hiett. In size, flavor and color the quality cannot be excelled, and there are thousands of acres of land about Biggs that will produce that class of the popular golden fruit.

FRESNO.

PROFITS OF ORANGE GROWING.—Sanger Herald: One of the first questions asked by men who contemplate investing money in an orange grove is, "How long will it be before the trees will begin to pay an income?" The practical experience of an orange grower residing near Centerville—John Douglass—is: Budded a number of trees four years ago which bore between 300 and 500 good-sized oranges this season. They are of the Parson Brown variety, and with the exception of the rough skin which is so common to fruit from young trees would pass for fine oranges. Mr. Douglass is an expert in fruit budding and a practical nurseryman. His experience is an answer to the age that orange trees must be in order to pay an income. The oranges from his grove netted him on an average $1.06 per box.

BANANA GROWING A SUCCESS. — Fresno Republican: It is possible that bananas may be successfully grown in parts of this State and become commercially important. Ex-County Tax Collector N. W. Moody has 400 banana trees on his place on Kings river, three miles above Centerville and in the orange district. Every tree is either in blossom or has developed a bunch of the toothsome tropical fruit. These bananas are growing in the open in the red orange soil that is characteristic of the belt. The trees are four years old and this is the first time that they have put forth blossoms or that the latter have matured into bananas.

GLENN.

CONSIDERABLE LAND CHANGING HANDS.—Willows Journal, Dec. 25: R. Gallagher of San Jose has purchased 200 acres on the Glenn grant in the neighborhood of the tract recently purchased by his brother. The land will be planted to fruit trees the coming season. Dr. Baylor has purchased 160 acres of land adjoining that of Gallagher and will improve the same. A number of fruit growers in other portions of the State have become interested in this section and are contemplating purchasing small tracts of the Glenn ranch in the near future.

HUMBOLDT.

CREAMERY PRICES. — Arcata Union, Dec. 22: The following prices were paid the past month by Eel river valley creameries: Cream Valley, 26½c; Cold Brook, 16 days 23½c, 14 days 28c; Grizzly Bluff, 16 days 22½c, 14 days 26c; Cold Spring, 16 days 24c, 14 days 27c: Eel River, 24½c; Excelsior, 16 days 24c, 14 days 28c; Riverside, 16 days 24c, 14 days 27c; Ferndale, 24 days 24½c, 6 days 28c; Crown, 16 days 24c, 14 days 28c; Andreason, 16 days 23½c, 14 days 27¼; Friel, 24c; Capitol, 25½c.

LOS ANGELES.

OLIVE AND PRUNE TREES GOING FOR FIREWOOD. — Pomona Times, Dec. 26: Not a week passes that we do not hear or see of olive orchards going to the wood pile. Now we regret this, but it is surely for the best. Generally, the orchards did not have the proper care; but those that did have never paid any profit to the owners, the cost of land, planting and care being taken into account. It is the judgment of the best observers of the olive in this section of the State that, even if the crops were full and regular, at the prevailing prices of oil and pickles, profits could not be made. This is unfortunate. We had hopes that not only the olive but fig would be among our profitable fruits, and thus give us a larger variety of valuable resources; and we are not without hope that some day both may be profitably produced in this valley. Some prune orchards are going like the olive. Some of them have not been pruned or in any way well cared for during the past few years. The prune has not been a regular bearer and one year with another has not averaged much, if any, above half a crop. For the past few years the crop has been short, whether from age of trees or neglect we do not know. In boom days and for some years following orchards that bore full crops have been cut down and replaced with other fruits.

SACRAMENTO.

CANNERY PROJECT.—Woodland Democrat: Sacramento parties are contemplating the establishment of four new canneries, in time for the next fruit and asparagus crops. There is a possibility that one or more of these canneries may be established on the Yolo side, on account of low taxes and the opportunity to obtain cheap rates.

CUTTING EVERGREENS FOR CHRISTMAS TREES.—Sacramento Record-Union: The cutting down of the most beautiful specimens of young and growing evergreen trees for use in Christmas tide is an evil that must be corrected. In California hundreds of thousands of the best specimens of evergreen trees from the foothills and mountain sides are ruthlessly felled to serve a sentiment for a very few days, with the result that a very considerable area of deforestization may bring positive ill upon the country.

SAN BERNARDINO.

ORANGE SHIPMENTS.—Redlands Facts, Dec. 29: The shipments of oranges from Redlands for the present season to Dec. 27 aggregate 159,185 boxes, against 72,184 boxes for the corresponding time last year. Shipments of lemons for the same period have been 4418 boxes, and for the corresponding period last year 3248 boxes. To ascertain the number of cars of oranges divide by 362, the number of boxes constituting a standard carload. A car of lemons consists of 312 boxes. Shipments still continue to go forward in greater quantity than during the corresponding period of last year. The past week's shipments exceeded those of last year for the same week by about nine cars.

SAN DIEGO.

SILK CULTURE ASSOCIATION.—San Diego Union, Dec. 27: The meeting of the San Diego Silk Culture Association yesterday at the Chamber of Commerce rooms was quite well attended. A letter was received from a gentleman in Italy who stated that he had a large number of silk worms and eggs, and would be pleased to send some here if the people made a success of the proposition. Mrs. Williams said that San Diego had just as fine silk worms as could be found on top of the earth, and much better than any that could be found in France or Italy. She said that, if the people would provide the leaves for food, they could have all the worms they wanted without sending to Europe for them. Secretary Choate suggested that a talk be had with the Land & Town Co. managers, as he understood that water was soon to be delivered on some of this land, and they might be induced to have a mulberry grove or two put out. A committee consisting of Mr. Swayne and Mr. Pilling was appointed to take a census of the trees of the county and find not only the number of them, but also the condition of the groves.

SAN JOAQUIN.

FROST HAS DONE GOOD. — Stockton Mail, Dec. 28: The coldest wave experienced here for some time struck Stockton last night, the thermometer falling to 28° above zero this morning. There was a heavy frost, and even after the sun came out the air continued so chill that the frost lingered in the shade until late in the forenoon. Fruit and grain men say that the frost has come at a time when it will be of immense benefit to the grain and fruit interests in this part of the valley, as it will drive the sap down and permit of pruning and also kill off insects which would otherwise amount to a pest. Last season both fruit and grain suffered, owing to the fact that there was no frost. In the grain roots, especially of early sown grain, there was an insect which destroyed considerable of the crop. It is believed that the present frost will have the effect of killing off a large percentage of the grain and fruit pests, and one or two more cold nights will be of immense benefit.

ORANGES PLENTIFUL.—Lodi Sentinel, Dec. 29: Orange picking has commenced at Langford & Adams' grove in the Langford Colony, and it will not be long before shipping commences. The crop will not be as heavy as last year, but the quality and size of the fruit come up to the top notch. Langford & Adams lost a large quantity of the fruit owing to the heavy wind which created havoc in general some time ago. They estimate that enough oranges to fill fully 150 boxes were blown from the trees, and as they were green, became a total loss. The output of the Colony orange grove found ready market last season at good prices.

LARGE FRUIT DRYING PLANT.—Stockton Mail, Dec. 27: An enterprise which will be hailed with gratitude by the small growers of fruit is soon to be commenced by a company at Lodi, of which Dr. W. M. Mason is the head, and his brother, Lewis Mason, is the manager. They have commenced the construction of a large fruit-packing, sorting and storage house at that place, and in the spring will build sulphur houses, a cutting shed and other structures for drying fruit, besides preparing a large drying ground.

SANTA BARBARA.

EUCALYPTUS GROWING PROFITABLE. Los Angeles Post: The eucalyptus has been experimented with as a piling for many years at Santa Barbara. It is now proved that the blue gum makes in every way the best pile for our coast. It is better and more resistant to the teredo and limnaria than even a creosoted spruce pile from Oregon. The eucalyptus piles are now sold in Santa Barbara for from $5 to $10 a pile. A first-class pile must be 50 feet in the clear. This brings the maximum price. The endurance of the pile varies with the condition of the sap flow when it is cut. An acre of eucalyptus in a favorable location can produce at least one thousand first-class piles. Cutting this estimate in two we still have a return of $5,000 to the acre. We are astonished to hear that fine eucalyptus for piling are still being cut for firewood. A good eucalyptus grove has a financial future.

SANTA CLARA.

PRODUCING OIL OF ROSES UNPROFITABLE.—San Jose Mercury: Mrs. Whittell owns a fine prune orchard just north of town, which is generally known as the "Rose Farm" from the fact that a dozen years ago she planted several acres of African rose bushes for the purpose of extracting the oil from the flowers, which oil is very valuable. She tried the experiment thoroughly, but it did not prove a success, and for some years the rose patch has been going to decay. She has leased the farm to Aubrey Miller, formerly of Lexington, and he recently plowed up all these rose bushes and will plant trees or vines in their stead.

SANTA CRUZ.

MIDWINTER APPLES. — Santa Cruz Surf, Dec. 27: Apples are now ripening on the Barrett place. They are of the Early Harvest variety and are the second crop.

SHASTA.

HIGH PRICE FOR BEEF.—Redding Free Press: From Gazelle, Siskiyou county, comes a story of the sale of 1000 head of beef cattle for $40,000 or $40 per head. Edson Brothers, who have large herds, refused 9 cents on the hoof.

FRUIT TREES DYING.—Redding Free Press: The people of Happy Valley, particularly the fruit growers, are becoming greatly alarmed over the condition of the fruit trees in their neighborhood. The leaves are blackening and falling, and the smaller limbs are decaying. The real cause cannot be ascertained. Some attribute it to the smelter smoke, while others are of the opinion that it is the work of an infectious insect. Preparations are being made to make a thorough examination in order to ascertain the exact cause.

SONOMA.

PRICES OF HORSES DECLINING.—Santa Rosa Press-Democrat, Dec. 27: Mart Rollins has gone to San Francisco after a band of horses to sell here and at Petaluma. The horses are some recently purchased in this State and Oregon for the German Government. The animals cost the Germans $125 per head, but the quieting down of the trouble in China took away the cause for the purchase and left the German Government with about 3500 head of horses in San Francisco. The contractors bought the horses back at a cut rate and will resell them over the country.

MAKING OLIVE OIL ON A LARGE SCALE.—Santa Rosa Press-Democrat, Dec. 29: W. J. Eardley, the insurance man, having business in the Guerneville district, had occasion to pass the fine olive orchards owned by Dr. Prosek near the metropolis of the redwoods. The olive mill was at work crushing the olives and the manufacture of oil was in progress. Mr. Eardley had no idea that there were such olive orchards near Guerneville, or that so much oil was made there. Dr. Prosek has many acres of olives and has the most modern machinery for crushing purposes.

LEGISLATION WANTED FOR POULTRY INTEREST.—Santa Rosa Press-Democrat, Dec. 28: A committee from the Petaluma Poultrymen's Association has called upon Assemblyman-elect F. A. Cromwell Wednesday to enlist his services in securing an experimental station for Petaluma to advance the interests of the poultrymen. It is proposed to operate the station under the direction of the Agricultural department of the State University. The station would test various foods and poultry medicines and remedies and prove a valuable aid to the poultry interests. A committee from the association will visit Santa Rosa to secure data from the assessor showing the magnitude of the poultry business of the county. The association will also seek to have the penal code amended so as to make chicken stealing a felony which would result in convicted chicken thieves being sent to the penitentiary. Another desired amendment to the codes would govern the disposition of dead fowls and dead dogs the same as the disposition of the dead horses or cows.

BIG SALE OF CATTLE.—Santa Rosa Press-Democrat, Dec. 26: The Hinshaw cattle have been sold at last and sold at a price and under conditions which will make the sale one to be talked of for months to come. When the bids were opened a few days ago by the administrators they were all rejected, as they were deemed too low. The highest bid was $41.56. Saturday afternoon the cattle were sold, after prolonged and persistent bidding, for $55.02½ per head to William Evart, who is said to have been buying for a third party. Six bulls were sold to Mr. Evarts for $35.50 apiece. A. Bloom got the 200 head of hogs for $1080. There were 200 head of cows. The total sales figured up $12,298. With the cows goes a lease of 1600 acres of pasture until next October.

TULARE.

PRUNING VINES. — Tulare Register, Dec. 28: An experienced grower of vines says it would be a good thing if growers would go through their vineyards with light cultivators and so keep the weeds down that pruning can be put off until April, if possible. This will be better than to prune now and have the vines bleeding all winter, which is an injury. Moreover, if the vines are left unpruned, they will start out at the ends of the canes, which can afterwards be clipped off, when the vines will start afresh from close to the stump and danger from frost will be nearly eliminated.

VENTURA.

GOOD PRICES FOR BEANS.—Oxnard Courier: H. T. Neel, one of the leading bean growers of El Rio, has lately sold this year's crop at 5 cents per pound. Mr. Neel wagered some time ago a $40 suit of clothes with H. Wolf of Hueneme that he would receive as high as 5 cents before Jan. 1st. He made the trip to Hueneme Tuesday to claim the bet. His large yield this year was brought about largely through irrigation from the great Santa Clara irrigating ditch, which during the past season has done more for the farmers within its reach than almost any wet winter could have done.

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THE HOME CIRCLE.

The Woman With the Broom.

Bowed by the cares of cleaning house, she leans
Upon her broom and gazes through the dust,
A wilderness of wrinkles on her face
And on her head a knob of wispy hair.
Who made her slave to sweeping and to soap,
A thing that smiles not and that never rests,
Stanchioned in stall, a sister to the cow?
Who loosened and made shrill this angled jaw?
Who dewered this narrow chest for blowing up
Of sluggish men-folks and their morning fire?

Is this the thing you made a bride and brought
To have dominion ever hearth and home;
To scour the stairs and search the bin for flour,
To bear the burden of maternity?
Is this the wife they were who framed our law
And pillared a bright land on smiling homes?
Down all the stretch of street to the last house
There is no shape more angular than hers,
More tongued with gabble of her neighbors' deeds,
More filled with nerve-ache and rheumatic twinge,
More fraught with menace of the frying-pan.

Oh, lords and masters in our happy land!
How with this woman will you make account;
How answer her shrill question in that hour
When whirlwinds of such women shake the polls,
Heedless of every precedent and creed,
Straight in hysteric haste to right all wrongs?
How will it be with cant of politics,
With king of trade and legislative boss,
With cobwebs of hypocrisy and greed,
When she shall take the ballot for her broom
And sweep away the dust of centuries?

—Edwin W. Sanborn, in New York Sun.

Papa Joe's Auction.

An auction sale was on at the little old farmhouse on the mountain side. Papa Stevenson, who was eighty, and ma, who was seventy-six years old, were wandering around with pale faces and set mouths, taking farewell of all the little trinkets that had been their household goods for forty years and more. The farmyard was filled with neighbors who looked pityingly at the old people, but did not forget to bid right smartly upon anything that they wanted.

A dapper looking lawyer from town was auctioneer. Another lawyer was clerk, and kept run of the sales with a lead pencil on the back of a new shingle.

Papa and Ma Stevenson had quarreled. It was not new for them. Both had tempers, and both had shown them all their lives. Yet in spite of it, they had loved each other with a fondness that had glorified the little farm on the side of the mountain.

Five years before they had received from a city man who had stopped at the farm on a hunting trip among the mountains a new-fangled coffee pot. Ma had accepted it with delight. She was tired of making coffee in the same old way, year in and year out. She hated above all things the scrap of dried fish skin that she had to put into the old tin coffee pot every morning of her life. The new pot made coffee as clear as a quill and as strong as wine. But after a little Pa hankered for some of the brew of the old tin pot that had served so long. He continually fussed about the new article till at last the patience of the good woman wore out. It was the first real quarrel of their married life. But it did not last long. Pa came in after work one night, and sitting down in the armchair in front of the hearth began to cry silently to himself. He was wet to the skin, from the sleet he had worked in all day. He was miserable, and his pride was broken. But it took ma some time yet before she would completely give in. She helped him out of his wet things with her mouth in a pucker. At last she brushed back his long, wet hair with her soft hand and said:

"Never mind, Joe; I was as much ter blame as you were." After that the reconciliation was easy.

The next quarrel was also easy. During the few years following the old people frequently fell out over trivial things. Their children had all grown up and had gone their ways. One was a prosperous farmer down in the valley. Another was the wife of a neighbor on the next farm over toward Oxford. Betty Stevenson could look across the hills to her daughter's house and draw comfort from the neat appearance of the building, when she was lonesome. The old people, now having nothing to take up their attention but the routine of the place, found it easier to make disagreements out of the little things of life.

Six months before the auction there had been a fiercer misunderstanding than ever. Pa had gone down to the house of a neighbor and remained there for several days. Ma had gone to town and consulted a lawyer about a suit for separation. When Joe heard of this he posted off to town himself and retained another attorney. The lawyers heard them through, and after they were gone put their heads together. "It is a shame to separate those good people, when their tempers have been kept under so long," said Lawyer Canfield. "I could see by the very way she accused him that she loved him. And did you hear him call her 'Betty?' It was tender from mere habit. Let's fix it up." And they did. To make a reconciliation more sure they got them to sign an agreement that if they ever quarreled again they would separate and sell all the household goods, the money to be divided evenly. This was signed the more readily because both Betty and Joe thought that it would serve as a check to their tempers.

But two weeks before the scene at the farm there had been a more determined falling out than ever. It was so trivial a matter that afterwards neither could remember just what it was about. They had slept two nights at the houses of neighbors, and then had called the attorneys in to carry out the agreement. Lawyer Canfield, who was too soft-hearted to be a successful attorney, had done all in his power to reconcile the couple. He had failed completely. Though he was sure that there was love between them, the utmost he could do would not bring it to the surface. When he got them together they fell to accusing each other, and threshed over the old straw until his head reeled. The children had refused utterly to say a word. They loved both the old folks and pitied them so much that they knew the fairest way was to show no partiality. They stood ready to give homes to them when they wanted to forsake the homestead up on the mountain side.

Discouraged at their obstinacy, Mr. Canfield and the other lawyer set the date for the auction. The farm and all its belongings would not bring over fifteen hundred dollars. The attorneys were men who seldom stooped to things so small in their practice. This time they were doing it out of charity for the old people, who, in spite of their folly, were of cultivated tastes and had been of consequence in the neighborhood. To insure good prices, and to be handy in case of a possible reconciliation at the eleventh hour, the lawyers themselves rode up to the mountain farm to do the auctioneering.

That morning both Joe and Betty had arrived early. He had gone from shed to shed looking over the tools that he had collected during his years of hard work. Here was a short-handled hoe that he had made for Betty to dig around her pansy bed. There was the top of the old buggy that they had ridden home from church in for so many years. Up in the barn shed was the little old baby carriage that John and Mary and Betsy had all been trundled in. Silently and with an aching heart he took farewell of each article. Stowed in the attic of the barn was a wooden sled that he had made for the children to slide on the crust. He remembered now how ma's eyes had warmed and softened with love when he had taken it into the kitchen to show her the night before Christmas. She had put her arms around his neck and kissed him, saying, "Joe, you can make anything that you try to." The caress and her appreciation had more than repaid him. But now that was all over. How hard they had worked all those years! They used to say, as the weary days of toil wore away, that they would sometime enjoy a calm and peaceful old age. That after the children were all gone, and they had saved a thousand dollars they would live the last twenty years of their lives in peace and comfort. Joe gulped down a great sob as he thought of it. He involuntarily started for the house to put his old arm around her and to beg her pardon and forgiveness.

Betty had been looking through the boxes of baby clothes in the attic with much the same feeling. Her tears had fallen on the broken toys that the children had played with. The dirty little doll that Betsy had held in her hands the last night before she went back to the Land of Eternal Youthfulness quite broke her heart. She had not brought them down from the attic for ever so many years. She wished now that in their old age she and Joe had looked more at these things. Perhaps both their hearts would have been tenderer and more gentle for the looking. She heard him coming in through the shed door and went down, determined to kiss him once more before the neighbors came to buy the things.

As she went down the stairs, her glasses bleared with mist, her head hit an old coffee pot hanging on a nail, and it tumbled down ahead of her. As Joe saw it his face hardened. She took off her glasses and looked first at the pot and then at his grim white face. She did not kiss him. Neither ever knew how near they had been to happiness.

And now the auction was on. Half the goods had been sold; and as article after article came up to the barrel where Mr. Canfield was bidding them off, he stopped now and then to try and touch their stern hearts. When the little red wooden cradle had been put up, and both of them had insisted on helping to bring it forward, he had stopped to wipe his own eyes. Some of the more discriminating in the crowd had read the misery on the faces of the old people, and had seen through their attempt to appear unconcerned. Many were moist eyed.

Someone handed up the worn-out, new-fangled coffee pot. No one but Joe and Betty knew the history of it. They watched with eager eye to see how much it would bring. The most that anyone would give was 4 cents. Settled misery showed through the calm of Betty's countenance. The bidding was a little dull, and Joe shambled forward with the old armchair that he had sat in so long. It was the chair that Betty had brought out to the door for him on summer evenings for forty years. It was the chair that she had placed for him at the warm hearth when he came in from the woods of a winter evening, chilled and tired. It was the chair that had been a factor in almost every scene of their married life. It waited for them the day, forty years before, when he had brought her, a young and rosy bride, to the farm that his ancestors had left to him. It was dear to him, and he knew that it was dear also to her, for he had seen her sitting in it, knitting, by the sunny south window for more summers and winters than his excited fancy could now count.

As Mr. Canfield lifted the chair to the attention of the crowd he saw Betty start forward with a white, eager face. Then she stopped, and the rich blood mantled her face like the face of a blushing schoolgirl. She hesitated a minute and then pushed her way through the crowd.

"Don't sell pa's chair," she cried. "I want to keep it!"

An unfeeling neighbor—for there were some in Oxford county—laughed under his breath. "What does she want it for?" he asked.

Everyone heard it. Joe turned as pale as death and held his breath. No one had ever dared to treat Betty that way before. Betty went pale, too. Lawyer Canfield saw his opportunity and said:

"Because she loves him! What do you suppose?"

The man laughed again.

"Course I love him," said Betty, stoutly. "Ain't he the father of my children? I ain't ashamed to own I love him."

Again the man laughed. Lawyer Canfield blessed him under his breath.

Joe Stevenson pushed angrily through the crowd, demanding to be shown the man who had laughed at Betty. He had forgotten that he was about to desert her himself. He had defended her all his life. He would do it now. Laywer Canfield pulled Betty and Joe into the empty bedroom and shut the door.

"Joe Stevenson, there is time to stop the auction. You both love each other. For God's sake kiss her and make up."

Betty was standing with downcast eyes, her cheeks still flaming from the anger the laugh had given her. All of a sudden she put her apron to her face and sobbed.

"Ladies and gentlemen," said Lawyer Canfield when he again mounted the barrel and turned toward them. "Mr. and Mrs. Stevenson have decided not to sell any more goods. They will continue housekeeping. (There were tears in his honest blue eyes). Those who have bought goods and wish to keep them may take them. But the money will be refunded to any who wish to return them."

The people understood, and nothing was taken away. When all the money had been returned there were 4 cents left over. The man who had bought the coffee pot had taken it away with him. And he never returned it.

It was with a great deal of satisfaction that the neighbors on the surrounding mountain farms saw the blue cloud of smoke rise from the chimney of Joe Stevenson the next morning.—Portland Transcript.

A teacher had told a class of juvenile pupils that Milton, the poet, was blind. The next day she asked if any of them could remember what Milton's great affliction was. "Yes'm," replied one little fellow. "He was a poet."

MAL-NUTRITION

You may or may not be eating enough; and are thin. You may or may not feel well—some folks don't know what it is to feel well.

This is mal-nutrition. You are not getting the use of your food.

Take a little Scott's emulsion of cod-liver oil. Begin with a little; increase; but don't overdo it. Take as much as you can without upsetting the stomach.

Feeling well is bodily happiness.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York

Love.

O Golden Age, whose light is of the dawn,
And not of sunset; forward, not behind;
Flood the new heavens and earth and with thee bring
All the old virtues, whatsoever things
Are pure and honest and of good repute;
But add thereto whatever bard has sung,
Or seer has told of, when in trance or dream
They saw the Happy Isles of prophecy.

Let common need, the brotherhood of prayer,
The heirship of an unknown destiny,
The unsolved mystery round about us make
A man more precious than the gold of Ophir.
Sacred, inviolate, unto whom all things
Should minister as outward types and signs
Of the eternal beauty which fulfills
The one great purpose of creation, Love,
The sole necessity of Earth and Heaven.

—John Greenleaf Whittier.

Something About Frogs.

A frog undergoes extraordinary changes during its lifetime. To begin the summer as an insignificant egg and end as a full-fledged frog must undoubtedly afford a variety of experiences.

The frog family is represented by about forty species, the best known of which are the bullfrog, the shad frog, which appears in the spring at the season of shad; the wood frog, found in the forest; the marsh frog, a native of swamps and marshes, and the spring frog.

Of these the bullfrog is the largest, and unlike its cousin, the common frog, it does not reach maturity in one season. Sometimes four seasons pass before it attains full growth. Its tadpole days extend over one summer, and ofttimes two, and it is never really old until ten or twelve years after reaching maturity. In the polliwog state its food is soft moss, water plants and the green scum of stagnant pools, although in captivity it will eat bread and meat, and occasionally it will lunch off its neighbor's tail.

After the frisky tadpole period the frog still remains a peculiar animal. It is chiefly remarkable by reason of the amount of water it requires. It dies in a very short time if deprived of moisture, and, to prevent this, nature has provided an inner sack for storing away surplus water. In case Master Frog sets out on a journey, this sack of water is a safeguard against drying up. The water thus stored up is as pure as spring water.

In Australia, where the terrible droughts exist, the natives seek a bush and digging beneath it find a round clay ball, out of which jumps a frog. Within the ball is pure water, which the frog has stored up in a wonderful manner, and with this the weary traveler slakes his thirst.

A frog will soak up half its weight in water in an hour, and consequently its body is half liquid. Its bones are soft and few in number; it has no ribs or diaphragm, and therefore cannot breathe as we do; instead it gulps down air by the mouthful by means of muscles in the throat. Its tongue is hung in an extraordinary manner by the outer end, and is flapped out and in like a flash, enabling it to catch insects very adroitly.

An adequate supply of air is not obtained through the mouth, but the frog's skin is one mass of large pores through which it absorbs air. This affords another explanation why a frog requires a large amount of water. Its skin must be kept soft, that its breathing apparatus may work effectively. A bullfrog contains such a quantity of water that if it is touched with a red-hot iron it suffers no pain.

Common frogs migrate from one pond to another if the water becomes low, and not infrequently the traveling frogs meet with a hostile reception from the occupying colony of frogs. In winter these cold-blooded creatures hibernate, They are extremely voracious during the summer and lay up stores of fat, and this nourishes them during the long, cold winter, when they lie buried in the mud.

When frogs come out from their long winter's fast, their appetites are in full vigor, and continue so until about one month before they go into winter quarters. Then their desire for food abates, and they eat little or nothing. A strange preparation for a winter's fasting!

Frog's flesh is esteemed a great delicacy, and froggeries have been established in many places for the cultivation of frogs for a table delicacy. It sometimes happens that the owner of a froggery finds that a whole pondful of frogs has decamped during the night and is journeying to some distant pond. The astonished owner is then at his wits' end, for it is neither an easy matter to search the woods for a colony of frogs or drive them home when they have been found.—Pets and Animals.

The Fallacy of Boils.

It is an unshaken article of belief with most people that skin diseases are almost always catching; that they show that the sufferers themselves or their parents are no better than they should be; that they indicate that "the blood is bad," that you must be careful or you will "drive it in," and the patient will die, if nothing more, and that a boil is worth five dollars in doctors' bills saved. They are all wrong—teetotally wrong—on the very best medicinal authority. Not more than two or three of the hundred or so skin diseases catalogued are catching, and the chances are that the eruption is as innocent and as innocuous as a cold. If there is such a thing as "bad blood," medicine has not found it out. Next to nothing is known in regard to the condition of blood in disease. Chemical and microscopical study has utterly failed to show that there is any difference between the blood in health and the blood in cutaneous disorders. Certain of them are symptomatic of nervous breakdown, and imperfect digestion causes others. Tomatoes, bananas, strawberries, shellfish and other articles of diet, harmless to most of us, cause a rash to break out on others. Evidently the medical profession does not fear "driving the disease in," for the treatment for cutaneous affections is now wholly local. A boil is an acute inflammation of the tissues surrounding the hair follicle, and is due to some infection of the follicle by a germ, generally the staphylococcus pyogenes aureus. I thought you might like to know the name. Boils come upon the just and the unjust, on those who have good blood and those who have bad blood. What forms inside the tormenting thing is not the strained-out impurities of the blood, for pus does not exist in the blood. It is of local formation.—Ainslee's.

A teacher in civil government had told his pupils that once in ten years the State of Massachusetts takes a census. Little James, who is an attentive scholar, upon being called up to recite, said, "Once in every ten years Massachusetts comes to its senses."—New York Tribune.

DOMESTIC ECONOMY.

Domestic Hints.

Sheep Tongues and Olives.—Sheep tongues boiled, skinned and split in two lengthwise, rolled in the same mixture and grilled, are good eating. The tongues may be sliced lengthwise, rolled about an olive stuffed with sweet red peppers, then strung on little skewers and broiled, and served with some thick cold sauce.

Domino Cakes.—Bake almost any kind of plain white cake in a shallow pan, cutting it when done into oblong pieces like dominoes. Ice these pieces on the sides as well as the top, and when the icing is hardened draw the lines and make the dots with a brush dipped in melted chocolate. This recipe is very popular for childrens' parties.

Cranberry Relish.—Cranberry relish that is excellent with meat, and which is a variation of an English receipt, calls for green gooseberries in place of cranberries. Five pounds of cranberries, washed and picked over, three pounds of seeded raisins and the peel of five large oranges are put through a meatchopper and cut fine. Add the juice of the oranges and three pounds of granulated sugar. Mix well and let it boil up quickly, then set back to simmer for three hours.

Mustard Pickles.—Mrs. Lincoln's calls for one quart each of small, whole cucumbers, large cucumbers sliced, green tomatoes sliced, small button onions, one large cauliflower divided into flowerets, and four green peppers cut fine. Make a brine of four quarts of water and one pint of salt, pour it over the mixture of vegetables, and let it soak twenty-four hours. Heat just enough to scald it, and turn into a colander to drain. Mix one cup of flour, six tablespoonfuls of ground mustard and one tablespoonful of tumeric, with enough cold vinegar to make smooth paste; then add one cupful of sugar, and sufficient vinegar to make two quarts in all. Boil this mixture until it thickens and is smooth, stirring all the time, then add the vegetables and cook until well heated through.

Hints to Housekeepers.

The ivory handles of your knives and piano keys will preserve their creamy tone if wiped off twice a week with a cloth dampened with alcohol.

Young rabbits can be easily told because they skin easily, and their jaws crack quite freely under pressure betwixt finger and thumb.

If, when you wash your brie-a-brae, you will use a camel's hair brush for the interstices, and warm water and castile soap, they will emerge from their bath as fresh as new.

There is no domestic remedy that so promptly cuts short congestion of the lungs, sore throat or rheumatism as will hot water when applied promptly and thoroughly.

For peach and pear salad, fresh ripe fruit should be used. Peel the pears and cut them into slices. Pare and quarter the peaches. Put them in layers in a glass dish with sweetened whipped cream between each.

Cheese sticks to serve with salad or with a meat jelly may be made quickly from bread. Trim off the crust and cut into finger length pieces an inch and a half thick. Toast over the fire and sprinkle with Parmesan cheese.

To make an oyster rarebit, put in a saucepan one-half pound of full American cheese, cut into small pieces. Add to it from one-quarter to one-half tablespoonful of butter. Stir until the mixture is creamy and pour over hot toast.

Let nothing about your house get slipshod. Things kept in perfect order not only look better, but last longer than things half cared for. She is no true housekeeper who keeps the front of the house in order and allows the kitchen and offices to be "slicked."

In spite of all the remedies offered for driving away ants from the house, the only sure way seems to be to catch and kill them. Set in the closets plates coated thick with soft lard, with little sticks leaning against them for the ants to climb. When filled drop into a pan of boiling water, and then set plates as before.

Soft leather gloves may be washed in the following manner: Make a strong suds of any good white soap, and to two quarts of suds add one teaspoonful of borax dissolved in half a pint of hot water. When the mixture is cold, put the gloves on the hands and wash as if washing the hands. Rinse, draw them off and hang to dry, but not in the sun. Work gently, as the wet leather stretches. When nearly dry pull into shape.

A Few Words about Pain-Killer

A prominent Montreal clergyman, the Rev. James H. Dixon, Rector St. Judes and Hon. Canon of Christ Church Cathedral, writes:—"Permit me to send you a few lines to strongly recommend Perry Davis' Pain-Killer. I have used it with satisfaction for thirty-five years. It is a preparation which deserves full public confidence."

Pain-Killer A sure cure for Sore Throat, Coughs, Chills, Cramps, &c.

Two Sizes, 25c. and 50c.

There is only one Pain-Killer, Perry Davis.'

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YOU can buy a chimney to fit your lamp that will last till some accident happens to it.

Macbeth's "pearl top" or "pearl glass" is that chimney.

You can have it—your dealer will get it—if you insist on it. He may tell you it costs him three times as much as some others. That is true. He may say they are just as good. Don't you believe it—they may be better for him; he may like the breaking.

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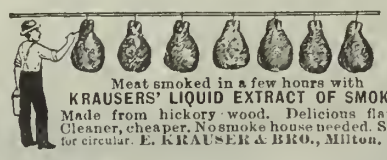

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We are the largest manufacturers of Steel Wheels and Truck Wagons in the World. Write for Catalogue. Havana (Ill.) Metal Wheel Co.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 2, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Jan.	May.
Wednesday	70⅝@70	73¼@72¾
Thursday	69⅞@70	72½@72¾
Friday	69¾@70⅝	72⅝@73¼
Saturday	70½@72⅜	73¼@75⅜
Monday	73⅛@75¼	75¾@78¼
Tuesday	*—@—	—@—

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Feb.	Mar.
Wednesday	*-s —d	-s —d
Thursday	6s 0½d	6s 0¼d
Friday	6s 0¼d	6s 0⅜d
Saturday	6s 0⅜d	6s 0⅝d
Monday	6s 1¾d	6s 1⅞d
Tuesday	*-s —d	-s —d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May, 1901.	Dec., 1901.
Thursday	1 03½@——	——@——
Friday	1 04⅛@1 04	1 08¾@——
Saturday	1 05⅛@1 05⅛	1 10 @——
Monday	1 05¾@1 06¾	1 10⅝@1 10
Tuesday	*——@——	——@——
Wednesday	1 07¼@1 05⅛	1 09 @1 09½

*Holiday.

WHEAT.

While there was no active trading in the local market, either in spot offerings or futures, there was a firmer tone developed, on no very well defined ground, other than that wheat was too low and that deliveries from producers in the region tributary to Chicago were on the decrease; also, that previous reports of light crop in Argentina were confirmed. The Chicago speculative market advanced nearly 2c. per bushel on Saturday last, and options in this center moved upward at same time fully 1c. per cental. In prices obtainable for actual wheat in the open market there was no radical improvement, but there was no special pressure to realize and sellers generally insisted on full current figures, There was little change Monday, and Tuesday being a holiday, business was wholly suspended. The market to-day (Wednesday) was unsettled for options, and spot wheat was quiet, but was moderately firm at the quotations. Three wheat cargoes were cleared from this port within the week, making 13 for December, the shipments for the month aggregating 40,400 tons at a valuation of $822,400, and being the heaviest export movement for any month the current season. November comes next on the list in the export record and falls 8,000 tons short of December. Since July 1st 61 cargoes of California wheat have gone outward, aggregating 159,600 tons, with a clearance valuation of $3,380,000.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.03⅛@1.07¼.

December, 1901, delivery, $1.08¾@1.11.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.07¼@1.05⅛; December, 1901, 1.09@1.09¼.

California Milling	$1 02½@1 07½
Cal. No. 1 shipping, alongside	98¾@1 00
Oregon Valley	97½@1 00
Washington Blue Stem	1 00 @1 05
Washington Club	97½@1 02½
Off qualities wheat	92½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s2d@-s—d	6s3d@6s3½d
Freight rates	35@36¼s	38@—s
Local market	$0 95@98¾	$0 98¾@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Quotable values remain in same position as last noted, with trading light. It would be extraordinary to have any special trading during the mid-Winter holiday period. Stocks are of fair proportions. The last China steamer carried 14,250 barrels, being a good average amount, but showing a decrease as compared with several weeks immediately preceding.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

The movement has been slow since last review, both outward and on local account, but the market was not burdened with offerings and was moderately firm. Although not appreciably higher, the market on the whole was less favorable to buyers than to preceding week. Present supplies are mainly Feed descriptions. Stocks of Chevalier are practically exhausted, and there is nothing to indicate that there are any large quantities of high-grade Brewing barley remaining unplaced.

Feed, No. 1 to choice	75 @ 77½
Feed, fair to good	70 @ 72½
Brewing, No. 1 to choice	80 @ 85
Chevalier, No. 1 to choice	97½@1 02½
Chevalier, No. 2	85 @ 90
Chevalier, poor	70 @ 75

OATS.

The market continues against buyers, with light stocks, which are mostly in few and strong hands. The demand is not active, however, at full current rates. The firmness of the market is most pronounced on desirable seed qualities, with transfers of the same in a small way at an advance on quotations.

White Oats, fancy feed	1 40 @1 45
White, good to choice	1 32½@1 37½
White, poor to fair	1 20 @1 27½
Gray, common to choice	1 20 @1 32½
Milling	1 42½@1 45
Surprise, good to choice	1 40 @1 45
Black Russian	1 12½@1 25
Red	1 15 @1 32½

CORN.

Spot stocks are showing some increase, both of domestic and Eastern product, causing the market to present an easier tone. There is considerable corn offering which is damp or otherwise more or less faulty, and the weakness of the market is more pronounced on corn of this sort than on choice, well-seasoned stock.

Large White, good to choice	1 15 @1 20
Large Yellow	1 15 @1 20
Small Yellow	1 40 @——
Eastern, in bulk (carload lots)	1 08 @1 10

RYE.

Quotations are without change, but are largely nominal, there being little offering and scarcely any inquiry.

Good to choice, new	87½@ 90

BUCKWHEAT.

Values continue as previously quoted, with market moderately firm at prevailing values. Local millers are only lightly stocked.

Good to choice	1 80 @1 85

BEANS.

In quotable prices there are few special changes to record, but market is quiet. Values for white beans and Limas are now on a tolerably high plane, and it is probable that they have about touched zenith for the season. It is true, stocks are light and in the main in hands fully competent to hold, but retailers and consumers are apt to purchase very lightly at current figures. Colored beans are in better supply than whites and are being in consequence offered at correspondingly easier values, but the movement in them is not brisk.

Pea, fair to good, 100 lbs	4 50 @4 75
Small White, good to choice	4 50 @4 65
Lady Washington	3 60 @3 75
Butter	4 00 @4 50
Pinks	2 00 @2 25
Bayos, good to choice	2 50 @2 75
Reds	3 00 @3 25
Red Kidney	4 00 @4 25
Limas, good to choice	5 50 @5 65
Black-eye Beans	2 75 @3 25
Horse Beans	1 75 @2 00
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

Little doing and not much stock to operate upon. Values are without appreciable change, but are being better sustained for Green than for Niles.

Green Peas, California	2 60 @2 75
Niles Peas	1 85 @2 00

WOOL.

There have been no signs of life in the local wool market the current week, and advices from Eastern manufacturing centers indicate the same inactive condition of affairs there, which is to be expected at this time of year. It is not likely that there will be much done in this line for several weeks to come. Stocks in warehouse in this center are estimated at from 9,000,000 to 10,000,000 lbs., as against about 7,000,000 lbs. a year ago.

SPRING.

Humboldt and Mendocino	16 @17
Northern, free	14 @15
Northern, defective	12 @13
Middle Counties, free	14 @15
Middle Counties, defective	11 @13
Southern, 12 mos	8 @10
Southern, free, 7 mos	9 @11
Southern, defective, 7 mos	8 @ 9
Oregon Valley, fine	17 @18
Oregon Valley, coarse to medium	16 @17
Eastern Oregon, choice	13 @15
Eastern Oregon, fair to good	10 @12
Nevada, as to condition	11 @15

FALL.

Humboldt and Mendocino	11 @13
Middle County	9 @10
San Joaquin	7 @ 9
San Joaquin Lambs	8 @ 9

HOPS.

There is practically nothing doing in a wholesale way, and business by jobbers is of a very light order. Values are being maintained at last quoted range, but no large quantities could be placed at full current figures. Offerings from first hands are limited and are mostly of qualities under choice, while the light inquiry which exists is mainly for select hops.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

With only moderate receipts the past week, the hay market has shown steadiness, but offerings proved ample for the requirements, and no great amount of selling pressure would have been necessary to have sent values to somewhat lower levels than lately current. Owing to tolerably large holdings by wholesale dealers, the market will receive more careful nursing, and is not so apt to develop weakness as if stocks were more widely scattered. Straw is being offered sparingly and is in fair request.

Wheat	9 00@13 50
Wheat and Oat	9 00@12 50
Oat	8 00@12 00
Barley	7 00@ 9 50
Volunteer	6 00@ 8 00
Alfalfa	8 00@ 9 50
Stock	5 50@ 7 00
Compressed	9 00@13 00
Straw, ₱ bale	37½@ 47½

MILLSTUFFS.

Business in this line has been of rather light volume, and at much the same range of prices as preceding week, the market displaying no especially noteworthy feature.

Bran, ₱ ton	13 50@14 00
Middlings	16 50@19 00
Shorts, Oregon	14 00@15 50
Barley, Rolled	16 00@16 50
Cornmeal	25 50@ ——
Cracked Corn	26 50@ ——

SEEDS.

There is not much Alfalfa seed offering, but market does not show any particular buoyancy. The future hinges greatly on the export demand, which in the past few years has been quite active from Australia and Germany. Some anticipate this season a decided decrease in the inquiry from abroad. Other seeds are ruling quiet at generally unchanged rates.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Values and the general tone of the market have not changed to any appreciable degree since last review. There is virtually nothing doing at the moment. The Grain Bag market at Calcutta is quoted firm.

Calcutta Grain Bags, buyer June-July	6¼@ 6⅜
Calcutta Grain Bags, spot	6 @—
San Francisco Grain Bags, 22x36, spot	5¾@ 6
State Prison Bags in lots of 2000, ₱ 100	—@—
Wool Sacks, 4 lbs	—@32½
Wool Sacks, 3½ lbs	—@28½
Fleece Twine	7½@—
Gunnies	—@12½
Boan Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDLS, PELTS AND TALLOW.

Tendency on Hides and Pelts has been to easier figures, with movement slow. Values on Tallow are being tolerably well maintained, with inquiry about sufficient to absorb at current rates all immediate offerings.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	10	9
Medium Steers, 48 to 56 lbs	9	8
Light Steers, under 48 lbs	8	7
Heavy Cow Hides, over 50 lbs	8½	7½
Light Cow Hides, under 50 lbs	8	7
Wet Salted Kip	9	8
Wet Salted Veal	9	8
Wet Salted Calf	10	9
Dry Hides	15½	12½
Dry Kip and Veal, 11 to 16 lbs	15	13
Dry Calf, under 4 lbs	16	13
Salted Horse Hides, large	2 50 @ —	
Salted Horse Hides medium	2 00 @ —	
Salted Horse Hides, small	1 00 @ —	
Dry Horse Hides, large	1 75 @ —	
Dry Horse Hides, small	1 00 @1 50	
Dry Colts' Hides	50 @ —	
Pelts, long wool, ₱ skin	75 @1 00	
Pelts, medium, ₱ skin	60 @ 75	
Pelts, short wool, ₱ skin	30 @ 50	
Pelts, shearling, ₱ skin	10 @ 25	
Deer Skins, best summer	35 @ —	
Deer Skins, good medium	— @ 30	
Deer Skins, thin winter	— @ 10	
Elk Hides	10 @ 12	
Tallow, good quality	4 @ —	
Tallow, No. 2	3 @ 3½	
Goat Skins, perfect	30 @ 37½	
Goat Skins, damaged	10 @ 20	
Kid Skins	5 @ 10	

HONEY.

The market is very quiet and is likely to continue on much the same lines as at present for the next few months. No great quantities could be placed at full current rates, nor could very large orders be filled at these or even higher prices, stocks being of too limited volume to admit of much activity.

Extracted, White Liquid	7½@ 8
Extracted, Light Amber	6¾@ 7¼
Extracted, Amber	5½@ 6½
White Comb, 1 lb frames	13 @14
Amber Comb	11½@12½
Dark Comb	8 @ 9

BEESWAX.

Offerings meet with ready sale at full current rates. Spot stocks are small and there is no evidence of there being much in the interior.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Beef was in very good request, with only moderate arrivals, and prices were well maintained at the recent advance. Mutton sold to as good advantage as preceding week, and is not likely to soon rule lower. Lamb was scarce and high. Veal was in fair receipt and was not quotably lower, although demand at full figures was not brisk. Hogs were in good request and brought as a rule full current figures.

Beef, first quality, dressed, net ₱ lb	7½@ 8
Beef, second quality	7 @ 7½
Beef, third quality	6 @ 6½
Mutton—ewes, 8½@9c; wethers	9 @ 9½
Hogs, hard grain fed, medium	5¾@ 5¾
Hogs, small, fat	5⅝@ 5¾
Hogs, large, hard	5¾@ 5½
Hogs, feeders	5 @ 5¼
Hogs, country dressed	7¼@ 7½
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	8½@—
Lamb ₱ lb	10 @10½

POULTRY.

Prices for Dressed Turkeys were at a wide range for the New Year's trade and market was somewhat irregular. Choice fresh stock was not plentiful and sold in a small way up to 21c., with the bulk of the business in California Dressed Turkeys within range of 14@17c., while Eastern Dressed Turkeys out of cold storage were offered within range of 10@15c. for fair to prime, and failed to clean up at these figures. Market for other poultry did not show much activity, but continued firm for choice young stock, such being in light receipt.

Turkeys, live hens, ₱ lb	12½@ 13
Turkeys, live gobblers, ₱ lb	12 @ 12½
Turkeys, Dressed, per lb	14 @ 16
Hens, California, ₱ dozen	3 50 @5 00
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	4 50 @5 00
Fryers	4 50 @5 00
Broilers, large	4 00 @4 50
Broilers, small	3 50 @4 00
Ducks, old, ₱ dozen	3 50 @4 50
Ducks, young, ₱ dozen	5 00 @6 00
Geese, ₱ pair	1 75 @2 00
Goslings, ₱ pair	1 75 @2 00
Pigeons, old, ₱ dozen	1 00 @——
Pigeons, young	2 00 @2 25

BUTTER.

High grade fresh, suited to the wants of the most particular trade, was not in heavy receipt and was in good request, meeting with a moderately firm market. There was a surfeit of offerings, however, of qualities under choice, mainly from fresh cows, and butter of this class dragged at low prices.

Creamery, extras, ₱ lb	26 @—
Creamery, firsts	23 @—
Creamery, seconds	22 @—
Dairy, select	22 @23
Dairy, firsts	20 @21
Dairy, seconds	18 @—
Dairy, soft and weedy	— @—
Mixed store	14 @15
Creamery in tubs	20 @21
Pickled Roll	20 @21
Firkin, California, choice to select	20 @21
Firkin, common to fair	17 @18

CHEESE.

Receipts are light and the quantity in store here has seldom been of smaller proportione than at present. Market is firm throughout, and prospects are that for some weeks to come prices will be no more favorable to buyers than at this date.

California, fancy flat, new	13 @—
California, good to choice	12 @12½
California, fair to good	11 @12
California Cheddar	— @—
California, "Young Americas"	12 @14

EGGS.

While market is lower than last quoted,

declines have been less pronounced than for a week or two preceding. As all the fresh eggs now coming forward are showing good average quality, the tendency is to a narrower range of prices than lately current. Cold storage eggs are still in evidence and market for them is weak at the quotations.

California, select, large, white and fresh.	31	@	—
California, select, irregular color & size.	28	@	30
California, good to choice store	26	@	28
Eastern, as to section and grading	—	@	—
Eastern, cold storage	22	@	24

VEGETABLES.

Tendency on onions was to higher prices, with stocks light and in few hands. Market for other winter vegetables was quiet, but moderately firm for desirable qualities at rates quoted. Fresh vegetables from southern California continued to arrive freely and sold at lower average prices than previous week.

Beans, String, ℔ lb	7	@	10
Beans, Wax, ℔ lb	—	@	—
Beans, Lima, ℔ lb	—	@	—
Cabbage, choice garden, ℔ 100 lbs	1 00	@	1 25
Cauliflower, ℔ dozen	50	@	—
Cucumbers, Bay, ℔ box	—	@	—
Egg Plant, ℔ lb	10	@	12½
Garlic, ℔ lb	3½	@	5
Mushrooms, Wild, ℔ lb	5	@	10
Mushrooms, Buttons, ℔ lb	15	@	20
Onions, Yellow Danver, ℔ cental	1 50	@	2 00
Peas, Sweet, garden, ℔ lb	5	@	8
Peppers, Green Chile, ℔ box	40	@	75
Squash and Pumpkin, ℔ ton	8 00	@	12 00
Rhubarb, ℔ lb	3	@	5
Tomatoes, ℔ crate	1 25	@	1 75

POTATOES.

Market was lightly stocked with strictly choice to fancy qualities, and such brought comparatively stiff figures, but there was a superabundance of the more common grades, with market for latter slow and weak. Sweets were plentiful and cheap, the demand for them not being active.

Burbanks, River, ℔ cental	30	@	60
Burbanks, Petaluma-Tomales	35	@	60
Burbanks, Salinas, ℔ cental	85	@	1 15
Burbanks, Oregon, lb cental	55	@	90
Sweet Potatoes, Yellow, ℔ cental	50	@	90

The Fruit Market.

FRESH FRUITS.

Apples are in fairly liberal supply, mainly the product of this State and Oregon. While the demand has not been brisk, it has been sufficient to keep values tolerably well maintained, the quotable range continuing about as last noted. Firmness was not a noteworthy feature, however, and was confined almost wholly to strictly choice and fancy stock. Common qualities were salable only at low figures, being taken by buyers who looked mainly to price. While medium grades were in fair request, stocks of this description were large enough to keep the market rather favorable to buyers. Pears now offering are wholly of the Winter Nelis variety and these are not moving very freely at full current rates. Persimmons are in light supply and are not receiving much attention. A few chests of Molindo Strawberries arrived, the quality being very ordinary.

Apples, fancy, 4-tier box	1 25	@	1 50
Apples, good to choice, ℔ 50-lb box.	65	@	1 00
Apples, common to fair, ℔ 50-lb box.	25	@	50
Pears, Winter Nelis, ℔ box	60	@	1 25
Persimmons, ℔ box	40	@	75

DRIED FRUITS.

In the market for cured and evaporated fruits there has been the same dullness as for several weeks preceding, about the only difference to note being that the inactivity was, if possible, still more pronounced. By making a special rate to European buyers, the Cured Fruit Association has been forwarding outward some of the large sized Prunes as also some of the smallest, the rebate amounting to about a cent per pound on the large Prunes, but not affecting the four regular sizes. The rebate noted is in addition to the rebate granted to foreign buyers at the opening of the season. In other fruits there has been virtually no movement, prices remaining nominally as before, but forced sales cannot be effected at figures nominally current, there being little or nothing at present other than the views of holders upon which to base quotations. Europe had a big crop of Prunes the past season, and the Eastern States are fairly well stocked with Apples and Peaches of their own production, which accounts to no small degree for the comparatively light inquiry experienced thus far this season for our product. Considerable demand for California fruits is looked for, however, in the spring months from the northern and territorial mining regions, and it is altogether probable that moderate quantities will be required on Eastern account, as also for Australasia, Europe and the Orient.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6½	@	7
Apricots, Royal, choice, in sacks, ℔ lb	7½	@	8
Apricots, Royal, fancy	9	@	—
Apricots, Moorpark	9½	@	11½
Apples, in 50-lb boxes, rings, pressed, fancy	5¼	@	5½
Apples, 50-lb boxes, rings, pressed, good to choice	3½	@	4½
Figs, White, fancy pressed	6	@	7
Nectarines, ℔ lb	4	@	6
Peaches, unpeeled, fancy	6	@	6½
Peaches, unpeeled, choice	4½	@	5
Peaches, peeled, in boxes	11	@	14
Pears, unpeeled Bartletts, halved, fancy.	5	@	6
Pears, halved, unpeeled Bartletts	3½	@	4½
Pears, quartered, unpeeled Bartletts	3½	@	4½
Plums, Black, pitted	4	@	5
Plums, White and Red	5	@	6
Prunes, Silver	4½	@	6

COMMON SUN-DRIED.

Apples, sliced	2	@	3
Apples, quartered	2	@	3
Figs, Black	1½	@	2½
Figs, White	2½	@	3½
Peaches, unpeeled	3	@	5

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: Santa Clara, four sizes, 3c. per lb.; 40-50s, 7c.; 50-60s, 5¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼c.; 100-120s, 2c, which is the uniform price for this grade; Sonomas, other than smallest, ⅛c. less; other districts, ¼c. less, except for smallest; Rubys, ¼c. premium.

RAISINS.

The market presents no new features, being exceedingly quiet, which is not unusual for the Raisin trade at this time of year. Official rates remain unchanged, but market is not firm at quotations, and especially is this the case as regards Sultanas and Seedless, outside holdings of which are being offered at less than Association prices.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@	—
Dehesa Clusters, 5-crown	2 50	@	—
Fancy Clusters, 4-crown	2 00	@	—
London Layers, 3-crown, ℔ box	1 60	@	—
do do 2-crown, ℔ box	1 50	@	—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb		—	@ 7
Loose Muscatel, 3-crown		—	@ 6½
Loose Muscatel, 2-crown standard		—	@ 6
Loose Muscatel, seedless		—	@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9¼c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Oranges were in good supply, and while selling at about same range of prices as preceding week, the movement was not brisk, cold weather operating against the sale of this fruit. Lemons were in more than ample supply for the immediate limited demand, values remaining quotably unchanged, although light stocks of Limes favored the market for Lemons to a slight degree.

Oranges—Navel, ℔ box	1 25	@	2 50
Valencia, ℔ box	—	@	—
Seedlings, ℔ box	75	@	1 50
Tangerines, ℔ box	75	@	1 25
Grape Fruit, ℔ box	1 25	@	2 25
Lemons—California, select, ℔ box	2 25	@	2 50
California, good to choice	1 50	@	2 00
California, common to fair	75	@	1 25
Limes—Mexican, ℔ box	4 50	@	5 00
California, small box	50	@	1 00

NUTS.

There is little movement in either Almonds or Walnuts, and no large quantities of desirable qualities of either variety are offering. Quotable values remain as before noted.

California Almonds, shelled	23	@	26
California Almonds, paper shell, ℔ lb	12	@	14
California Almonds, soft shell	10	@	12
California Almonds, hard shell	6	@	7
Walnuts, White, soft shell	8½	@	10½
Walnuts, White, California, standard	7½	@	10
Chestnuts, California Italian	—	@	—
Peanuts, California, fair to prime	4	@	5
Peanuts, Eastern, hand-picked	5½	@	6
Pine Nuts	5	@	6

WINE.

The wine market is quiet but firm, quotable rates continuing as last noted, viz., 15@20c. per gallon for dry wines of 1900 vintage. Any changes in values during the balance of the season are almost certain to be to firmer figures, although no radical fluctuations are looked for. There are no heavy quantities now offering from or remaining in first hands. There is a moderate outward movement of wines, both overland by rail and by water routes.

Abandonment of Lime and Sulpuhr Sheep Dip.

An Act of the South African Parliament provides a certain sum to be set aside for the provision of free sheep dips to the farmers. Last year a great proportion of this money was spent in lime and sulphur with the help of which Mr. Davison, the Chief Inspector of Scab, had announced that he was going to exterminate the disease. The result of the lime and sulphur dippings is now stated by the Government to have been so unsatisfactory that only one-sixth of the amount voted for free dips will be spent during the coming season on lime and sulphur, the other five-sixths having been already spent upon other dipping preparations. The Government is compelled by Act of Parliament to provide lime and sulphur at every depot, else it is fair to assume they would have abandoned the dip altogether. Australia has abandoned lime and sulphur. South Africa is giving it up in despair, the United States wool houses won't have it at any price, neither will Bradford nor the European continent.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	188,307	3,357,483	2,909,712
Wheat, centals	174,053	3,206,228	2,341,698
Barley, centals	21,645	2,429 010	3,798,156
Oats, centals	5,030	445,216	535,858
Corn, centals	3,955	68,275	79,979
Rye, centals	...	95,037	82,480
Beans, sacks	2,471	462,641	283,220
Potatoes, sacks	35,387	870,483	676,940
Onions, sacks	3.290	126,450	117,563
Hay, tons	2,435	97,011	94,813
Wool, bales	140	22,072	35,159
Hops, bales	179	6,040	7,412

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	91,148	1,882,392	1,754,243
Wheat, centals	201,935	2,978,285	1,949.914
Barley, centals	170	1,466,455	2,982.213
Oats, centals	17	46,784	23,924
Corn, centals	537	2 061	8,950
Beans, sacks	293	8,405	16,879
Hay, bales	1,627	80 951	57.466
Wool, pounds	...	233,621	3,461,835
Hops, pounds	5,236	412,1[illegible]5	659,509
Honey, cases	5	1,632	3,226
Potatoes, packages	4,230	56,118	45,380

California Dried Fruit at New York.

NEW YORK, Jan. 2.—Evaporated apples, common, 4@5c; prime wire tray, 4¾@5¼c; choice, 5½@6c; fancy, 6½@7½c.

California Dried Fruits.—Market fairly steady, with very little doing.

Prunes, 3½@8½c.

Apricots, Royal, @14c; Moorpark, 15@17c.

Peaches, unpeele , 6@9c; peeled, 16@20c.

Choice Vegetables always bring high prices. To raise them successfully, a fertilizer containing at least 8% Potash should be used.

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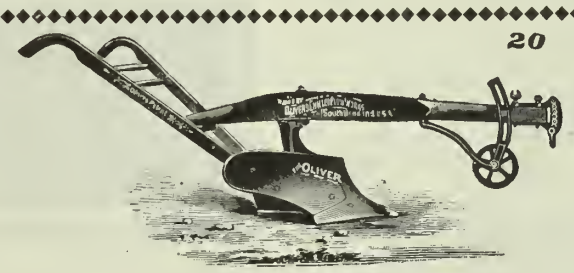

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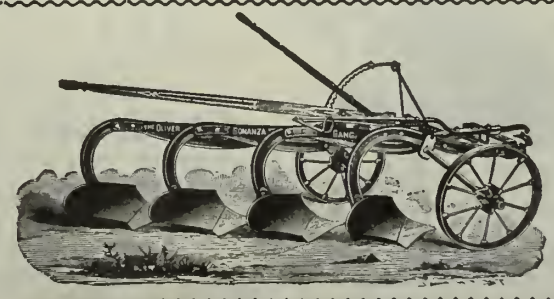

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contracted cord, thrush, grease heel and all forms of lameness yield readily to

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SHEEP AND WOOL.

Organization Advocated.

John W. Cooper of Arcata, Humboldt county, writes to the Union concerning conditions in the wool and dairy interests as inviting organization for the promotion of those products: Having had some experience in both dairying and wool growing, I came to the conclusion many years ago that it took about the same amount of capital and labor to produce a pound of wool that it does for a pound of butter. But since then the creameries have enabled the dairymen to produce butter much cheaper, and I also found that after a sheep ranch is established and stocked all ready to run, the running expenses will make the wool cost, ready for market, from 10 to 12 cents a pound before the proprietor can get a cent for his investment, so that, according to present prices, the wool growers are far below the plane of prosperity that dairymen are on.

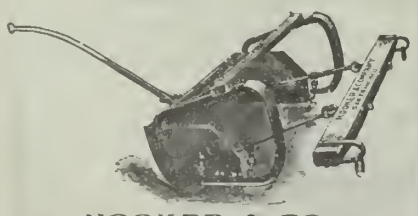
I see by the Standard that the secretary of the California Wool Growers' Association at Fresno is trying to get up country organizations of wool growers throughout the State. It certainly seems to me about time for some such movement to protect and benefit their interests, for I do not know of another class of producers who are so outrageously swindled out of the value of their product as the wool growers.

Previous to Cleveland's agitation for free wool, our spring wool sold for 33 and 34 cents a pound here in the county. Wool is as high or higher now in the English market than it was then, yet, with the same tariff as then, we are only offered 15 to 17 cents a pound for it—less than half its value. We are not even getting the English market price for our wool without the tariff. I see by the Cotton and Wool Reporter of Boston that American manufacturers paid as high as 11½ pence a pound for ordinary clothing wool in the grease at the last November sales in London, which, with the tariff added, brings the wool here to 35 cents a pound, besides the freight on it, which shows that foreign or imported wool costs about the same price now as it did before the agitation for free wool, and I have seen other quotations that prove the same fact. It is evident that, as we have to import wool, our own producers should get fully as much for their wool as is paid for wools of the same class in the London market, and the tariff price added. And as we do not get even the London prices for our wool, there must be some unfair advantages taken of our wool growers.

Improved Fresno Scraper.

5-FOOT. WEIGHT, 300 LBS.

NEW STOCK. NEW PRICES.



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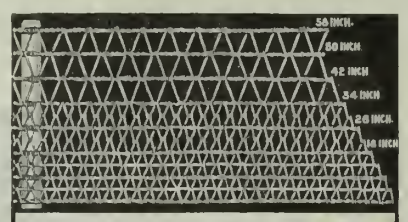
Cold Storage of Fruits and Vegetables.

As cold storage is now becoming available in different parts of the State, some data are interesting. The best temperature for fruits and vegetables in cold storage was carefully investigated by the Kansas Experiment Station, and as the experience of our most successful storers of perishables here does not vary much from it we submit it in the following table:

Product.	Temp., deg.
Apples, summer	38 to 42
Apples, winter	32 to 35
Pears	33 to 38
Peaches	36 to 38
Grapes	38 to 40
Plums	38 to 40
Berries - Chorries	40
Watermelons	40
Cantaloupes	40
Tomatoes	38 to 42
Cucumbers	38 to 40
Cranberries	34 to 38
Onions	34 to 40
Potatoes	36 to 40
Cabbage	34 to 35

The Kansas station remarks that the value of cold storage for juicy summer fruits like berries, grapes, peaches, plums and vegetables like the tomato and cucumber is not in keeping them from one season to the next, or from early to late seasons. It can not do either. It is only in holding them from short periods of stagnation and gluts in the market. A week and frequently a few days is sufficient for this.

NEVER before, according to the New York Fruit Trade Journal, has so much finely colored stock of oranges been marketed so early in the season. The Californian is certainly studying the requirements of distant markets and trying to meet them. A few cars of Navels have gone forward to Europe and the results will be watched with interest. To capture the English markets with California oranges would be a revelation and a surprise even to the most ardent promoter of this delicious fruit.



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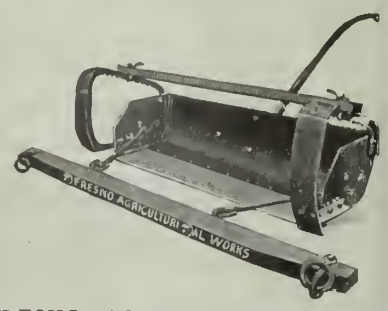
The Fresno Scraper.

3½-4-5 Foot.



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The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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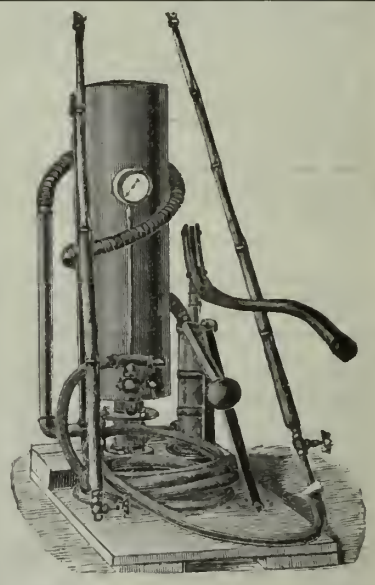

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Winter Treatment for Peach Curl.

Some time ago we gave a preliminary review of an excellent special report on the curl leaf of the peach by Newton B. Pierce of Santa Ana, the local vegetable pathologist of the U. S. Department of Agriculture. It is a notably careful and satisfactory publication. We refer to it again now because the time is at hand for winter treatment of peach trees to prevent the later appearance of the fungus which is destructive to foliage and fruit. Mr. Pierce's report shows that of the various sprays experimented with, Bordeaux mixture, in the proportion of five pounds copper sulphate, five pounds lime and forty-five gallons of water gave the best results, the equal weights of the copper sulphate and lime being most effective when the mixture is applied shortly before the opening of the blossom buds. When it is desired to increase the durability of a spray by increasing the proportions of lime, the application should be made earlier or equal proportions of copper and lime should be maintained. The total saving of foliage increases with the increase of copper sulphate when the amount of lime remains constant, but the average saving per pound of copper sulphate decreases with the increase of copper.

In the treatment of peach leaf curl, from 95% to 98% of the spring foliage was saved by spraying. A net gain of 600% in foliage over that retained by adjoining unsprayed trees resulted in the case of several different sprays. Bordeaux mixture when applied to the dormant trees increased the weight and starch producing power of the leaves, and the sprayed trees showed a great gain over the unsprayed in the number and quality of the fruit buds they produced for the following year, the gain in the number of spur buds being over 100% in some cases. The lower limbs of sprayed trees showed a marked gain over those of unsprayed trees as compared with the upper limbs in both the number of fruit buds and lateral shoots they produced.

The trees should be sprayed each season, as the experiments proved that treatment one season will not prevent the disease the following year. Spraying should also be done even though the trees may not be expected to bear, as the loss of the crop of leaves is shown to result in as great a drain upon the trees as does the maturing of one-half to two-thirds of a crop of fruit.

Cyclone nozzles with lateral or diagonal discharge are best adapted to the work. The proper time for winter spraying and the number of applications depend to some extent on the locality, season, etc., but active sprays are likely to do most good if applied from one to three weeks before the opening of the blossoms in spring. The proper time to apply sprays for the prevention of curl is in dry, calm weather, and during the middle of the day, in order to avoid dew or frost upon the limbs as much as possible.

Of nearly 200 peach and nectarine varieties considered with a view of determining their comparative susceptibility to curl, it was found that very few were wholly free from the disease and that some were very subject to it. Some of the choicest varieties, as the Elberta and Lovell, are seriously affected, and it has been demonstrated that a single winter treatment will prevent the disease upon even these varieties. It may be thus fairly claimed that the spraying methods recommended will save to the peach industry some of its finest varieties.

$100 Reward, $100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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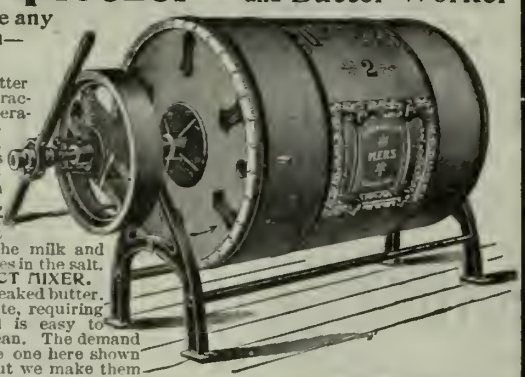
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No mottled or streaked butter. It's easy to operate, requiring little power and is easy to wash and keep clean. The demand grows daily. The one here shown is for dairy use but we make them for the largest creameries and butter factories. In conjunction with our factory we run a repair shop where we repair on shortest notice all kinds of separators and every kind of dairy machinery. Send for free illustrated catalogue No. 81
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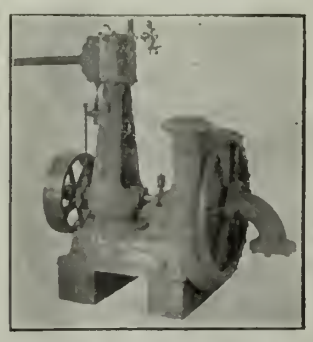
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The most successful raisers of fancy and market poultry use our foods. Circulars and small samples free. Agents wanted in every town in California to handle our goods.
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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING DEC. 18, 1900.

664,033—CAN OPENER—C. A. & O. Anderson, Portland, O.
664,073—HOIST—H. C. Behr, S. F.
664,213—BRAKE—H. A. Denney, Reardan, Wash.
664,245—LOCK—J. A. Eastman, Fruitvale, Cal.
664,246—CANDLE—W. R. Ellis, Livermore, Cal.
664,138—HOTEL REGISTER—C. E. Elstner, Los Angeles, Cal.
664,142—CAN-FILLING MACHINE—F. B. Fulton, Anacortes, Wash.
665,881—HORSE HITCHING DEVICE—N. L. Goodwin, Thorp, Wash.
663,992—SAW FILING MACHINE—S. W. Gutridge, Granite, Ogn.
663,895 — POWER TRANSMITTER — J. Herbs, Fall Brook, Cal.
663,993—GOLD SEPARATOR—W. W. M. Hickey, S. F.
664,215—SLED—R. E Hickson, Moro, Ogn.
664,154—PAINT—J. A. Hommel, Los Angeles, Cal.
664,048—SAW HANDLE—J. Jett, S. F.
663,969—MASSAGE CHAIR—Johnston & Vanorman, Los Angeles, Cal.
663,905—PULLEY BLOCK—E. Knight, McCloud, Cal.
664,022—HYDROCARBON BURNER—G. H. Larkin, S. F.
664,052—BICYCLE—O. J. Laury, Redding, Cal.
664,054—DRAPER SLAT PROTECTOR—C. J. & T. T. Luckehe, Gridley, Cal.
663,914—TREATING ORES—H. Luckenbach, Seattle, Wash.
664,330—AMALGAM PRESS—A. Mackey, Douglas Island, Alaska.
664,292—MOTOR VEHICLE—W. Riddell, S. F.
664,298—NOZZLE TIP—F. W. & H. L. Shupert, Spokane, Wash.
664,300—GUMMER—D. M. Smyth, Pasadena, Cal.
664,029 — GAS GENERATOR — V. T. Weathers, Ione, Cal.
664,030—COMB CLEANER—J. H. Wheeler, S. F.
33,761—DESIGN—W. S. McRay, Cosmopolis, Wash.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

DESIGN FOR HORSESHOE PAD.—No. 33,691. Dec. 11, 1900. J. Ewing, San Francisco, Cal. This invention relates to a novel construction of elastic pad which is adapted to be attached to horseshoes to form a resilient bearing for the weight of the horse. It consists of a crescent-shaped block having a thin, flat plate with curved edges and the rear formed with a solid block of greater thickness with divergent annular ends to fill the space between the heels of the shoe.

BED BOTTOM ATTACHMENTS.—No. 663,170. Dec. 4, 1900. John Hoey, San Francisco, Cal. This invention relates to an attachment for bed bottoms of that class known as "wire" bed bottoms. It consists in the combination with the side rails and transverse bars of a bed bottom, of a cap or housing for said bars including a double series of parallel horizontal flanges. One series of these flanges forms a housing for the end bar, and the other series forms a housing for the side rail, said latter housing having its flanges extended beyond those of the other series. Vertical transverse end flanges connect the horizontal flanges, and the cap or housing has a centrally located bridge or extension for raising the end bars above the side rails, and having an exterior covering plate.

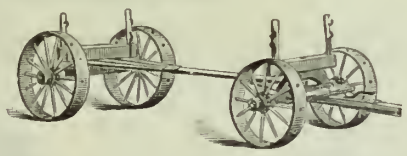
BICYCLE.—No. 664,052. Dec. 18, 1900. O. J. Lawry, Redding, Cal. This invention is designed to provide a relief for the riders of bicycles by making the axles or journals of the wheels and their bearings movable in suitable guides in the frame, supporting said axles against the pressure by springs of sufficient stiffness. The forks of the frame have slotted inner sides and the wheels are adapted to revolve between the forks, and are provided with a guide interior to each member extending some distance above and below their point of connection with the wheel axle. Each of said guides has its upper and lower ends slotted, one at right angles to the other, and the slots are provided with rollers adapted to travel in contact with the inner walls of the forks so that the movement will be easy and the axles will not bind; at the same time the wheels will be kept in an essentially vertical position between the forks. Above these slides are sufficiently stiff and elastic springs upon which the weight of the machine and the rider is carried. These springs constantly yield to all obstructions and irregularities of surface and thus form a very easy riding machine.

DRAPER-SLAT PROTECTOR.—No. 664,054. Dec. 18, 1900. C. J. & T. T. Luckehe, Gridley, Cal. This invention relates to a means for protecting the transverse bars or slats which are employed in connection with endless traveling canvas or other belts. It consists of a metal piece or cap fitting upon and partially enclosing the slat and having transverse and convex corrugations or runners between which the rivet is headed which secure the cap and the slat together. This prevents the wear which would ordinarily cut off the rivets or their heads, so that they would pull through and allow the parts to become detached, the corrugations forming a channel of sufficient depth for that purpose.

COMB CLEANER.—No. 664,030. Dec. 18, 1900. J. H. Wheeler, San Francisco, Cal., one-half interest assigned to Wm. Wilson of same place. This device is intended to clean combs, such as are used for the hair, and to remove any dirt or obstruction which ordinarily accumulates between the teeth of the comb. It consists of a frame or holder having parallel sides, wire coils upon said sides and a wire or strand wound around the sides and through the interstices of the coils, so that the wire is equidistantly fixed to form rows, the wires of one row spacing intermediate with the wires of the other. These rows thus lying in parallel planes, it is only necessary to press the comb upon them, and they will pass between the teeth of the comb and clean out any deposit which may have been formed therein.

Farm Wagon only $21.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30-inch wheels with 4-inch tire, and sold for only $21.95.



This wagon is made of the best material throughout, and really costs but a trifle more than a set of new wheels, and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.

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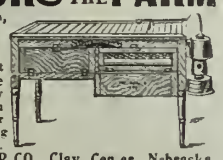

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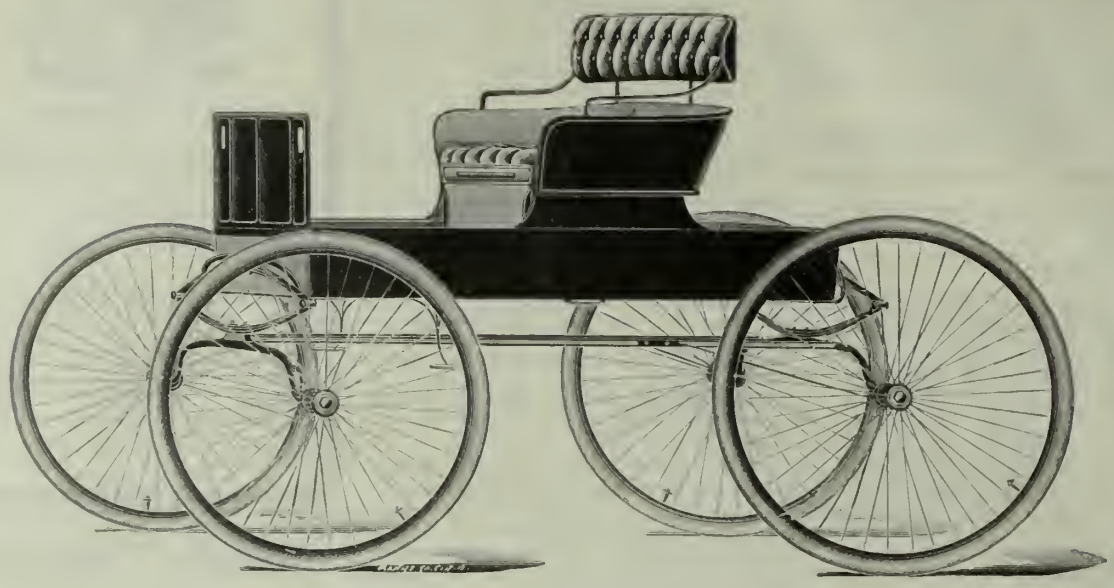

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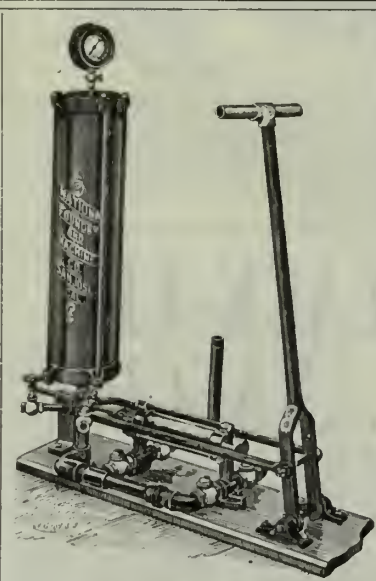

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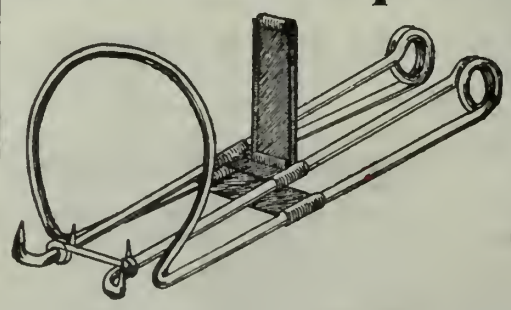

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 2. SAN FRANCISCO, SATURDAY, JANUARY 12, 1901. THIRTIETH YEAR. Office, 330 Market St.

Desirable Eucalypts.

There is an extending and very commendable interest in drawing more heavily upon the rich treasures of the genus Eucalyptus for the adornment and profit of California. We have long earnestly promoted this interest and are glad to note indications of success. A few years ago we gave an extended series of eucalyptus pictures and descriptive notes thereon drawn from the monograph of Mr. Abbott Kinney of Los Angeles, who is a devoted eucalpytologist. Southern California during the last few years has been wide awake to the desirability of a number of species which proved their adaptations at the University Forestry Station at Santa Monica and in the hands of private growers. It would be well if the planters in all our valleys should follow the lead of southern California in this direction. The objections commonly urged against the common blue gum do not all hold against some of its sister species. Some of them are handsomer, hardier and harder, more durable in wood and otherwise better than the Tasmanian species which early secured a right of way in this State.

A few species which are worthy of attention are shown in the pictures on this page. They are from the last report of the University Agricultural Experiment Station and are from the forestry substation at Santa Monica. In the report, Mr. C. H. Shinn, the inspector, has given interesting descriptions largely on the basis of notes by Mr. J. H. Barber, the foreman in charge.

Eucalyptus cornuta, the "Yate" of Southwest Australia, is of spreading habit. The foliage is somewhat thin, however, and does not afford a heavy shade. The leaves are small, narrow, dull green in color, but shining with a metallic luster in sunlight. The flower buds resemble close clusters of small horns, whence the specific name cornuta (horned). These horn-like calyxes fall away, leaving the blossoms in globular, pompon-like heads of yellow filaments. Later the filaments also fall, and the fruit develops in close, spiny clusters. The wood of E. cornuta is hard, tough and elastic, and is highly esteemed in Australia.

Eucalyptus calophylla is one of the handsomest species of the genus. It makes a straight, symmetrical, sturdy, leafy tree, with cinnamon-colored bark, and oval, pointed, bright green leaves. The large, creamy white flowers are borne in heavy clusters during August, September and October. The fruits are large and remarkable. They are rudely goblet-shaped, some 2 inches or more in length and 1 inch in diameter. These pods or capsules make excellent pipe bowls, and can be utilized also for umbrella handles and the like. The tree endures some frost, makes a fairly rapid growth, and may be ranked as a fine ornamental and a useful shade tree.

Eucalyptus Cornuta var. Lehmanni.

Eucalyptus ficifolia, the scarlet-flowered eucalyptus, is closely related to E. calophylla, but is even a handsomer tree in habit and foliage, not to mention its magnificent blossoms. It makes a symmetrical, pyramidal tree. The leaves are large, oval and pointed, thick in texture and dark green in color, paler beneath. The flowers, as in E. calophylla, are borne in heavy trusses on the ends of the branches, in August and September. They are brilliant red in color, varying on different trees from scarlet to crimson, always very showy. They are followed by heavy and pendent clusters of large pods, almost as large as those of E. calophylla, which are well shown in the illustration. The bark is cinnamon-colored and persistent. The tree is of much slower growth than many of the eucalypts, and never attains a large size, the maximum height being about 50 feet, but as a showy ornamental of striking beauty and a handsome avenue tree is not surpassed.

Eucalyptus Calophylla.

Eucalyptus Rostrata.

Eucalyptus Ficifolia.

Eucalyptus Obcordata.

Eucalyptus obcordata is a curious small tree of some ornamental value. Its dull, red flowers are borne more or less the year round. The leaves are small, thick and of a dull green color. The broad, flattened, recurved flower stalks are well shown in the illustration.

Eucalyptus rostrata, the red gum, has been very generally confused in this State with E. viminalis, a much inferior tree. E. rostrata is a fast-growing tree of erect habit, with persistent, smooth, gray bark, and drooping foliage of a grayish-green color. The blossoms are creamy white, small and in small clusters, produced freely in early summer. The tree endures extreme heat, resists frost better than many eucalypts, and stands considerable drought without suffering. Its timber is hard, strong and durable. Few trees can be better recommended for general planting than this the true "red gum." It is one of the species that should be much more freely grown in California. The illustration shows the small seed- and drooping stems so characteristic of E. rostrata.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, January 12, 1901.

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The Week.

There has been much and widely distributed rainfall since our last issue, and, with heavy frosts escaped thus far and large water supply assured, the State is going along through one of the best winters she has ever experienced. The conditions favor much confidence and activity in all industrial affairs, and the fact that we have within our boundaries this year more than the normal number of visitors and investors, makes the buoyant disposition all the more valuable and promising. Let every one do what he can to make this good year effective.

The speculative wheat market is firmer and foreign values are better, but the local spot transactions do not yet warrant advance in quotations. There is, however, something doing in pushing out wheat. Two full and one part cargo have gone this week for Europe. The barley market is firm and not changed, though there is an upward tendency. Part of a cargo has gone to New York. Barley is not freely offered and the situation is favorable. Oats are too high to cause a change to be expected, for Eastern oats are now coming in for use in filling Government contracts because local speculators are such good holders. Corn is a little easier, but not particularly lower. The lower priced beans are marked up this week, as the demand is running so strongly on them. Millstuffs are quiet and, though easy in tone, are not lower. Rolled barley has advanced. There is no change in hay, which is barely steady under a slack demand. Beef, mutton and hogs have all advanced this week. Butter is weak and lower under a heavy stock of common grades. Cheese is unchanged; stocks are light and the market firm. Eggs are slightly lower, but the market is in fairly good shape. Poultry has improved. Potatoes and onions are a little stronger because of the storm; both are going to Manila on Government account. The best apples and oranges are firm, but others are weak. Dried fruit is at a standstill. An export price has been made on raisins which should help some out of the country. Nuts are rather slow and easier. Wool and hops are too dull to talk about.

The meeting of fruit men in this city on Tuesday has marked out work for the convention to be held in Sacramento January 15th. It was resolved to organize under the co-operative laws of California with the name of the California Fresh Fruit Association, for a term of fifty years, and to choose five directors, whose duty it shall be to develop the fruit interests and market the crops. The choice of the principal place of business for the corporation was deferred until the convention meets at Sacramento. The object of the organization is to pack, handle, ship and dispose of California-grown fresh fruit to the best advantage of the grower, pool the products of special sections and segregate deciduous from citrus fruits. The chairman was authorized to present the plan of organization as outlined by the meeting to the convention of fruit men at Sacramento. We notice that many localities are appointing delegates to the convention, and it is to be hoped that the assembly will be large and representative.

Dairy Progress in California.

Dairy progress is really one of the most important and interesting phases of agricultural activity in California at the present time. Any one who visits the agricultural districts or attends general assemblies of farmers, such as are found at our Farmers' Institutes, must be impressed by the keen inquiry for up-to-date information on this subject. Such knowledge is being constantly applied in the building of new creameries and skimming stations; in the wide introduction of silos and new dairy machinery; in the constantly increasing area of alfalfa in the interior valleys and in the quickened interest in securing better dairy stock by the recourse to test and selection and by the use of better dairy sires. Progress is also shown by the statistics of the local products which will be given below. How to promote dairy progress along wise and effective lines, with the truest economy of public funds and the distribution of the greatest good to the greatest number, is a question of the clearest present importance.

Dairy organization has shown itself to be a most effective agency for progress in all the older districts of this country, and in the districts of the old world as well. There is no question about its desirability. It has never been employed to the extent of its possibilities in California. This is probably due in part to the fact that our dairy people are held apart by great distances and great cost of travel. They have also been difficult of unification because so large a fraction of them are not an English-reading people; because there is such a large proportion of dairy renters instead of dairy owners, etc. But allowing all that may be involved in the local situation which tends toward disorganization instead of organization, it is still clear that other causes have operated to restrict earnest and enthusiastic co-operation which is the beneficent fashion in older dairy regions. We have had efforts at organization promoted by trade interests, by individual interests and ambitions which were legitimate enough and perhaps of public benefit, but did not constitute a foundation broad enough for an effective organization. Besides this, there has been too much bickering and strife among those leading in the efforts at organization, and this itself has limited the spheres of their influence. On another page is the account of the establishment of another society in the dairy interest. It promises to have larger membership than its predecessors, but this remains to be determined.

Dairy education is wisely held by all who desire dairy progress to be an essential thereto. All the associations and individuals, so far as we know, have pronounced in favor of special instruction to be known as a Dairy School. There would be no trouble to secure the establishment of such a school if there were wider demand for it; but while our dairy societies are weak and fail to secure the strength which comes from wide membership and enthusiastic assembly, it is difficult to determine whether the general public is awakened to the desirability of a Dairy School or not. The subject bids fair, however, to reach a speedy test. We had the pleasure of a talk the other day with Assemblyman Myers of Kings county, and he assured us that he was working earnestly to secure a Dairy School for California. His residence and interests in one of the richest alfalfa counties of the interior valley have convinced him that the State should provide liberally for dairy education, and he will introduce and labor for a bill to establish, equip and maintain a Dairy School. We shall have the details of Mr. Myers' plans and propositions as soon as he sees fit to make them public. There may be others in the Legislature working along the same lines.

California dairy statistics are now provided for through the work of the Dairy Bureau as directed by the secretary, Mr. William Vanderbilt. There has just been published a creditable pamphlet containing the third report of the Dairy Bureau. It has various recommendations, to which we may find occasion to allude at some future time. What we wish to show in this instance is the great and growing importance of the dairy as a branch of our California agriculture, and that is strikingly presented in the following statement:

1898-9.	
Butter—24,869,084 lbs	$5,392,020
Cheese—5,294,938 lbs	593,093
Condensed milk—52,558 cases	218,988
Milk and cream used as food	5,325,399
Calves from dairy cows	783,423
Hogs produced on dairy wastes	964,762
	$13,277,625

1899-0.	
Butter—28,782,859 lbs	$6,360,054
Cheese—4,989,960 lbs	503,986
Condensed milk—66,302 cases	276,258
Milk and cream used as food	5,567,462
Calves from dairy cows	1,293,276
Hogs produced on dairy wastes	1,492,236
	$15,493,272

These figures are certainly calculated to arrest attention, and when it is remembered that while this is being done there are dairy imports still to displace and dairy exports still to exploit and realize. No wonder some people are calling so loudly for intelligent promotion of their industry; the wonder is that all who know its greatness and its promise do not assemble and secure public aid to which it is rightly entitled.

A GROUP of stock men met in this city on Tuesday to promote local live stock interests and to ally them more thoroughly with the greater interests of the interior. The chief theme of discussion was the pending proposition for leasing Government ranges. Col. Irish urged that it was most essential that California should have a voice in the National Live Stock Association, as the question of public ranges would be discussed, and steps will be taken toward securing legislation at Washington for the protection and control of ranges—a matter of great importance to the cattle men of the Pacific coast. He described the benefits that accrued to the cattle interests in Texas and in the Australian colonies under the lease system. The ranges should be placed under Government control, and the discouraging conditions now existing will soon disappear. It is hoped that a delegation may be sent from California to meet the National Association at Salt Lake next Monday. The officers for the local association for the coming year were chosen as follows: President, F. C. Lusk; vice-president, W. Mayo Newhall; treasurer, T. B. Bishop; secretary, F. J. Sinclair; executive committee—Walter L. Vail, Los Angeles; John Sparks, Reno; J. Churchill, Yreka; G. W. Grayson, Oakland; Jerry Millay, Phœnix, A. T.; J. Le Roy Nickel, San Francisco; Fred Cox, Sacramento; Henry Miller, San Francisco; F. C. Lusk, Chico. The convention was composed of representative cattle men and extensive owners of live stock from California, Nevada, Arizona and other parts of the Pacific coast.

ALEXANDER CRAW, the efficient breeder of beneficent parasites for our injurious fruit insects, is running short of forage for his priceless live stock. He needs especially a good supply of cottony cushion scale, and will be glad to pay express charges on all scale-infested twigs and branches that may be boxed or sacked and sent to him. This expressed wish should secure plenty, because without enough feed Mr. Craw cannot multiply the parasites for his future distributions. Mr. Craw's headquarters are on Clay-street dock, San Francisco, and packages will reach him at that address.

THE prune people at San Jose, after two full days of consultation with the packers, decided to put all matters looking to an improvement of the prune market into the hands of the executive committee of the Association. This committee has been given full power to act. The whole situation has been gone over, and directors of both the Association and the Packers' Company seem unable to find a solution to immediately relieve the market. It will require patience and hard work and these should not be withheld.

QUERIES AND REPLIES.

Oranges on Hardpan.

To THE EDITOR:—What would you advise in regard to setting orange trees on red soil, where the hardpan is within 18 inches to 2 feet of the surface, and is as deep as the hill is high, as far as I can ascertain? Would blasting out a hole be a benefit or a damage? Do you think an orange grove on this condition of soil advisable? If not, what is soil good for? I have ten acres plowed and find this condition of things, and as there are all manner of opinions, I shall deem it a favor to have you decide the matter final. Which is the better variety of olive for this section, Pendulina or Mission, for pickling?—READER, Tehama county.

We would not plant orange trees on upland clay loam over hardpan. We have no doubt trees can be grown if water and fertilizers are used in just the right amount to keep the trees thrifty, and they will bear good fruit when they are coached along with care and intelligence. But the amount of time and money required to bring an orange orchard into good bearing should have a better soil foundation. While there is plenty of good deep land to be had, it seems to us unwise to choose the valley red soil, much of which is indifferent and shallow. We do not quite know what can be done to advantage with the land you mention except getting a little winter pasturage. There may be a shattering of the subsoil by blasting, which would be of benefit, but usually blasting is only advisable where there is something below the hardpan which is worth blasting for.

The best pickling olive is the sufficiently large olive which bears best in the locality. The Mission is safest all around, but local observation may constitute others better. We would not plant any olive except where olives are now doing well and proving profitable.

Regulating Size in Pomelos.

To THE EDITOR:—The grape fruit trees set in the adobe soil of this section bear heavily, but the fruit runs to small sizes as a rule. Prices received by growers for this smaller fruit are unsatisfactory, the market demanding a larger fruit, say, forty to sixty sizes, which are difficult to produce, particularly of the Triumph variety, though trees seem very vigorous, making heavy growth. We are told that thinning the fruit early in the season will not tend to greatly increase the size of what is left on the tree, but that close pruning and cutting back will produce the larger fruit we desire. I believe I have not seen the matter brought up heretofore in any of the fruit journals. I would be obliged for any information you can give on this subject, as there is a considerable acreage in this district, most of which is from four to six years old, and on which no pruning has been done. —SUBSCRIBER, Porterville.

Pomelo growing is rather new and we have a great deal to learn about it. No doubt one trouble is in allowing the trees to carry too much bearing wood and thinning out of shoots where too dense to be desirable. The pomelo needs both cutting back and thinning of surplus growth resulting. It is hard to believe that thinning the clusters will not make the surviving individual fruits larger. We should like to have discussion on all points of pomelo policy.

Brown Apricot Scale.

To THE EDITOR:—What is the scale on the enclosed prune twig? Is it injurious, and what can be done for it?—READER, Sonoma.

The scale is known as the Brown Apricot scale, and it is very injurious to apricots, prunes, etc. The remedy is to secure the parasite which is destroying this scale in Alameda and Santa Clara counties. This can be had at the proper season, which is in the summer, by applying to Alexander Craw, State Quarantine Officer, Clay street dock, San Francisco. Winter sprays, like lime, salt and sulphur, have not been of much use with this insect. Kerosene emulsion, when the scales are young—in early summer—is better, but the parasite is best of all.

Almond Growing.

To THE EDITOR:—As far as susceptibility to frost is concerned have I planted these almonds in right order—Drakes, Nonpareil, I X L? What do you think of the I X L? Is it not too shy a bearer? Would it be better to plant the three varieties, or the first two, or how would it do plant Drakes' alone? A slough runs through part of the land, but only in very wet years is there much water. I would like to put in almond trees instead of prune. What kind of a tree does an almond make on plum root?—READER, Sutter county.

Of the three almonds you name the I X L blooms about ten days before the Nonpareil and about twenty days before Drakes—according to the records we have at hand. This makes about three weeks between I X L and Drakes. This later blooming has much to do with the growing preference for Drakes as a regular bearer, although it is a small-sized nut. Whether you should plant all three kinds or not must depend much upon your chance of frost injury. If we wished to drop one kind it would be I X L, for though it is a fine tree it is getting something of a reputation for shyness in some places. Drakes bears well by itself so far as we have heard. We never heard of the almond on the plum root as a commercial proposition. It ought to grow, but we should fear the unprofitability of the almond on any place wet enough to require a plum root.

Peppermint Growing.

To THE EDITOR:—Can I get seeds or roots of the commercial peppermint and information on the culture and manufacture of the same?—L. F., Butte county.

You can get a leaflet on its culture by addressing the Division of Botany, U. S. Department of Agriculture, Washington, D. C. There is no inducement to undertake peppermint growing. They have too much of it already at the East, and much has recently been plowed out. Several attempts have been made to start the crop on this coast during the last twenty-five years, and all have failed. The plant grows well, but there is at present no local demand to speak of for the oil. Investment has to be made in a distillery, and after that a discouraging fight with the few Eastern brands which are widely known and which our druggists prefer rather than to experiment with new supplies, the quality of which they do not know. We do not see anything promising in peppermint at present, though we presume an enterprise might be developed here and some trade done with the Orient, if one had the patience to stay with the undertaking for a number of years and money enough to meet the needs of it.

Peach Moth.

To THE EDITOR:—For some years we have been troubled with peach twig borer, and last year by the same or a similar worm entering the fruit early in its growth, leaving gum oozing from the outside, and working to the pit, spoiling the fruit. What can we do to get rid of the trouble? Second, judging from the fact that sulphur smoke from the Keswick smelters is sometimes very strong here, killing the pine trees, is there danger from adding another dose of sulphur to fruit trees in the regular lime, salt and sulphur spray?—ORCHARDIST, Shasta county.

The lime, salt and sulphur wash, if well made and freely applied to all the forks and other places on the tree where there is rough bark, is very effective in killing the hibernating larvæ of the peach moth which is doing the injury which you describe. If you have no scale and wish to spray for the peach moth only, kerosene emulsion, winter strength, is perhaps the best remedy. You can only tell the effect of the fumes you have with the sulphur wash added by observation. We doubt if one will add to the injury of the other, but you can escape chance of it by using the kerosene emulsion.

Sugar, Phillips and Salway.

To THE EDITOR:—What are the merits of the Sugar prune as compared with the French prune? Is the Sugar prune grown for drying and what time does it ripen? What time does the Phillips Cling peach ripen in this valley—before or after the Salway?—FRUIT GROWER, Del Rey, Fresno county.

The Sugar prune is large, early and sweet—perhaps as large as 20s to 30s of the French prune, as sweet as the French and three or four weeks earlier in ripening than that variety. Our observation is that the Phillips Cling comes in a little ahead of the Salway, but the Salway is variable and ripens through quite a long period sometimes. We cannot give dates of ripening. Perhaps some Fresno county peach grower will give us a little of his experience.

Potato Growing.

To THE EDITOR:—How early will it do to plant potatoes, and how deep? Do they need much water, and would they grow well on medium heavy soil, which has been a barnyard?—SUBSCRIBER, Kingsburg.

Time of planting potatoes depends upon the local climate. The plants will stand some frost and may come out again all right, even if the tops are frost injured to some extent. For the sake of having early potatoes, some plant early and take the chances of replanting, and, unless you have a very low, frosty place, that might do very well with you. If the undertaking is not large, we should put in some when the ground gets warm in February and others later. On medium loam you can safely cover 3 or 4 inches. If you plant late on a light loam, deeper covering is advisable. Potatoes delight in rich soil. Whether yours would be too rich would depend upon how long it has been used as a barnyard and how much stock has been kept. If it is only an ordinary barnyard and not a pioneer stock corral, it would probably be all right.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 7, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The extremely cold weather on the 1st and 2d was accompanied by killing frosts and followed by slightly higher temperature and heavy rain, with high winds in some sections. Considerable damage was done by the wind, principally in unroofing buildings and leveling fences. The cold weather is regarded as beneficial, as it has checked the premature budding of deciduous fruit and the too rapid growth of grain. So far as reported no damage has been done by the severe frosts. The rain has also been of great benefit and gives renewed assurance of a prosperous season. The unusually heavy snowfall in the northern part of the valley will prove beneficial to farmers and miners. Plowing and seeding were continued during the fair weather. A very large acreage of grain is being planted. Early sown grain and pasturage are in good condition.

COAST AND BAY SECTIONS.

The abnormally low temperature on the 1st and 2d was followed by somewhat warmer weather, with heavy rain and high winds. Killing frosts occurred in nearly all sections at the beginning of the week, causing some damage to tender vegetation and young orange trees, but in other respects the cold weather was beneficial. The rain was general throughout the section, and was very heavy in some of the coast counties. It will be of immense benefit to farmers and orchardists. The high winds caused considerable damage to buildings and fences in some sections. Plowing and seeding are still in progress, though temporarily checked by the storm, and there will be a large acreage of grain. Sugar beet growers are also preparing for an increased acreage.

Special reports at 10 A. M. to-day give the following as the rainfall for the preceding twenty-four hours at a few stations: Santa Maria 4.72, Arroyo Grande 4.74, Los Olivos 4.60, Los Alamos 4.18, Nipomo 4.56, Cambria 7.26, Cayucos 7.00, San Luis Obispo 5.08.

SAN JOAQUIN VALLEY.

Low temperatures and heavy frosts prevailed at the beginning of the week, checking the premature budding of deciduous fruits and retarding the growth of grain and feed. Lemons and olives were somewhat injured by the severe frosts. Toward the close of the week the weather became warmer and heavy rain fell throughout the valley, accompanied by high winds in some places. Some damage was done to fences and buildings by the wind, and the heavy rainfall caused the creeks to overflow in some localities. Plowing and seeding were suspended during the storm. Early sown grain continues in excellent condition and pasturage is abundant. Tree planting is in progress. There will be a large acreage of grain this season.

SOUTHERN CALIFORNIA.

Generally fair weather prevailed the first of the week, with cold nights and heavy frosts. Lemon groves in the vicinity of San Diego were slightly injured by frost, and it is reported that citrus fruits in other districts were somewhat damaged. Warmer weather prevailed at the close of the week, with heavy rain. The rainfall in nearly all parts of southern California Sunday night and Monday morning was unusually heavy, and will be of great benefit to farmers and orchardists.

EUREKA SUMMARY.—Lowlands are inundated. The heavy rains have not been very injurious to farming interests; have benefited orchards, preventing premature bloom. It will probably be two weeks before plowing is resumed.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Jan. 9, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	...	....	30 32	18.80	38	52
Red Bluff	3 97	12.68	14 69	11.64	30	52
Sa ramento	2 32	10 00	13 19	8.62	34	54
San Francisco	3 65	10 91	14.28	10.36	42	58
Fresno	1.52	6 95	6.11	3 97	30	58
Independence	2 10	4 95	2 09	2 57	16	52
San Luis Obispo	10.68	20.78	12 50	6.77	22	62
Los Angeles	1.06	7 85	4 57	7.24	40	62
San Diego	.72	2.45	2.60	3.73	40	66
Yuma	.00	.02	.66	1.80	26	76

CEREAL CROPS.

Pacific Coast Wheat Growing.

Mr. M. A. Carleton, cerealist of the Department of Agriculture at Washington, has recently made a very careful investigation of grain growing of the United States, with a view to using the knowledge thus gained of actual facts for the suggestion of means of improvement. Mr. Carleton was in California last year in pursuit of this work. He has just published an excellent report entitled "The Basis for the Improvement of American Wheats," which we find very interesting and suggestive. His description of our Pacific coast wheat regions and cultural methods therein will give our readers perhaps a broader view of their environment, and should be carefully considered. Mr. Carleton puts our States in what he calls the white wheat district.

White Wheat District.—This district covers, in a general way, the Pacific coast region, including California, Oregon, Washington and northern Idaho. All varieties that have become at all acclimated are characteristically white-grained, soft and starchy. Usually the factor which is probably most influential in producing a grain of such nature is the lack of humus in the soil, as is true in the irrigated district. The generally cool summers, however, no doubt give aid to the same end. Hard red-grained varieties, when brought to this district, deteriorate in a few years time. Nevertheless such introductions have in a number of instances proved beneficial.

Popular Varieties.—A majority of the more common varieties strictly characteristic of the district are of the group usually called club wheats and belong to the species Triticum compactum. Sonora, Defiance and Australian of California, Red Chaff of Oregon (distinct from the Palouse Red Chaff of the Palouse country) and Palouse Blue Stem of Washington are not, however, club wheats. As the botanical name of the club group implies, these wheats have their spikelets (meshes) so compactly arranged in the heads that they stand out nearly at right angles with the rachis (or stem of the head). The head thus becomes squarely formed (hence the name square head applied to many of the varieties), and, being usually a little larger at the apex than at the base, appear club-shaped. Thus, although the heads are usually rather short, each contains comparatively a large number of grains, which partially accounts, probably, for the large yields per acre in this district. Heads of Chili Club are occasionally found that contain over 160 grains each.

A very valuable characteristic of the club wheats is their ability to hold the grain in the chaff so that there is little danger of shattering, even during the driest season, if there should be much delay in the harvest. In some localities the grain, though ripening in July, is sometimes left standing till September before harvesting, a habit which, however, has no good excuse for its practice.

For the purpose of clearer discussion the district may be considered divided into three sections—California, Oregon, and the Palouse country of Washington and northern Idaho.

The California Section.—In southern California the varieties Sonora and Defiance are much grown, the latter particularly for its rust resistance, which is an important need in this part of the State. Sonora wheat has a reddish velvet chaff, is beardless, and is white-grained as seen in this district. The grain is a little harder than that of the club wheats, and is used for export, while the grain of the latter is used for home consumption.

From the latitude of Fresno to the Oregon State line Australian and the various strains of club wheats are principally cultivated. The best known varieties that are given special names at all are Golden Gate Club, Salt Lake Club and Chili Club. The variety Propo is also grown to some extent. Other sorts from the East, such as Rudy, are occasionally introduced, but these do not seem to yield so well, and, besides, shatter so badly that they soon have to be given up. Non-shattering varieties are in great demand. In all portions of the State the increase of the gluten content is probably the greatest need. All varieties grown in the State are winter wheats.

One of the most interesting sections of California devoted to wheat culture is that of the "tule" lands near Stockton. The great grain fields there show strikingly the possibilities in a reclamation of immense marshes. They were once vast flats covered with water, mud and a growth of bulrushes (Scirpus lacustris), called tule in Spanish. By means of pumping, dredging and throwing up levees these lands have been reclaimed, and now after many years they are among the most fertile in the State. Wheat yields from 50 to 80 bushels per acre here, and barley sometimes as much as 100 bushels or more per acre. This remarkable fertility is a result, in part at least, of the deep deposits of organic matter. There is still apparently a lack of certain mineral ingredients, such as lime and potash, which are needed to make the quality of the grain as good as the quantity.

As in the case of the hard spring wheat district, the chief difficulty in the way of successful wheat culture in California, so far as agricultural practice is concerned, is the enormous size of many of the farms or ranches. They are even larger than in the Dakotas and Minnesota, containing often from 20,000 to 30,000 acres. On this account it is impossible to give the attention to the details of farming that are necessary for the best results. The lack of attention to nitrogenous manuring, and especially to the alternation of wheat with leguminous crops, is particularly noticeable.

The combined harvester thresher is used in harvesting pretty generally throughout the State. This machine is either drawn with an engine or with twenty-eight to forty horses. By its use the grain is thrashed directly from the field and left piled in bags. Immense ricks of these bags of grain remain in the field sometimes for weeks, unmolested and undamaged by the weather. All grain throughout the State is handled in this form and calculations are made in bags and not in bushels. There is, therefore, no use for the grain elevator, in the ordinary sense of the term. Each bag contains two and one-half bushels, or about 150 pounds.

The Oregon Section.—West of the Cascades, in Oregon, conditions are somewhat similar to those in California. In a large portion of the State a considerable amount of spring wheat is grown. In addition to the ordinary club wheats some other varieties, such as Oregon Red Chaff and Foise, are also well represented. The midsummer climate is much cooler than in California and, therefore, harvesting is performed much later. On account of the greater dampness of the atmosphere and the smaller size of the farms combined harvester threshers are not used, but self-binders instead. There is great need of early maturing varieties, as the cool autumn weather begins so early. The nitrogen content of the grain is exceedingly small.

In eastern Oregon climatic and other conditions are quite different from those west of the Cascades, and a description of that section is more property included in the discussion of the Palouse country.

The Washington Section.—In western Washington the general conditions and the quality of the wheat are very similar to those of western Oregon, but in southeastern Washington and adjacent portions of Idaho and Oregon is a large section known as the Palouse country, which possesses peculiarities of soil and climate that are distinctly characteristic and radically different from those of the Pacific coast region proper. Strictly speaking, the Palouse country is considered to be rather limited in extent, comprising approximately Latah county, Idaho, and Whitman county and very small adjoining portions of Adams and Franklin counties, Washington. Recently, however, the term has come to be applied practically to nearly all of these last-named counties, as well as to Garfield, Columbia and Walla Walla counties, and may even include the northern portion of Umatilla county, Or. The two features which most distinguish this region from the Pacific coast proper are the dryness of the climate and very finely divided condition of the soil. The particles are so very fine that when dry the soil is practically mere dust. On windy days this dust fills the air, forming vast clouds that are very disagreeable to the traveler. At the same time, with very little rain the soil becomes quite sticky and difficult to manage. The capacity of the soil to absorb and retain moisture is remarkable. It is pretty generally believed that a rainfall of 12 inches in this district is sufficient to make a crop of wheat, while in the States of the plains 18 inches is considered to be rather low for successful wheat growing. Wheat is the chief crop of the region, though barley and oats are grown to some extent. The principal varieties (except Palouse Blue Stem) are of the club wheat group. They are usually soft-grained and starchy, and generally white, similar to those of the coast region, but a little better in quality. The three standard varieties commonly grown are Palouse Blue Stem, Palouse Red Chaff and Little Club. As regards the comparative distribution of these varieties, if the region be considered as divided into three parallel north and south belts, it will be found that Palouse Blue Stem prevails in the western belt, extending as far westward as North Yakima: Palouse Red Chaff in the middle belt, passing through the heart of the region, and Little Club in the eastern belt, reaching the foothills of the mountains.

The most serious obstacle to successful wheat culture in the Palouse country is the annually recurring drought, which occurs about two weeks before harvest time, particularly in the western and southern portions. From this cause the wheat is often badly shriveled, and both the yield and quality thereby much affected. A slight compensation for this loss lies in the fact that shriveled wheat in this district is more in demand for making macaroni than plump wheat, because of the greater proportional amount of gluten in the former. In order to escape the severe effects of drought, early maturing sorts are exceedingly desirable. It would probably be no exaggeration to say that a variety ripening ten to fifteen days earlier than the varieties now used, and as good in other respects, would add from $1,000,000 to $3,000,000 a year to the wealth of this region. In the central and southern portions of the region fall sowing is chiefly practiced, but in the northern and eastern portions, near the mountains, there is a larger proportion of spring varieties, and there a good, hardy winter sort is needed. In the drier western and southern portions, especially in the vicinity of Walla Walla, non-shattering varieties are necessary. There the combined harvester-thresher is used in harvesting, as in California. In the north and east, and in the more hilly portions, as in the vicinity of Colfax, the self-binder is more commonly employed. In a few places a comparatively new sort of machine has recently come into use. It makes a 10 or 12-foot cut, and is driven in front of the horses, as in the case of the header, but, unlike the latter, possesses a self-binding attachment as well.

Summary of Conditions and Needs of the District.—(1) Principal varieties grown at present: Australian, California Club, Sonora, Oregon Red Chaff, Palouse Blue Stem, Palouse Red Chaff, Little Club, White Winter, Foise. (2) Average yield per acre, about 14¾ bushels. (3) Needs of the grower: (a) Early maturity; (b) non-shattering varieties; (c) hardy wintering varieties in the colder portions.

THE DAIRY.

A New Dairy Association Organized.

A new dairy organization was formed in this city last week which is to be called the California Creamery Operators' Association, for the express purpose of elevating the local dairy interests, and which is to be conducted on the same lines as the National Butter Makers' Union, which has headquarters in all the leading Eastern States and which has done much for the betterment of the dairy industries east of the Rocky mountains.

The Association is to be made up of the various creamery managers and butter makers throughout the State and merchants who are closely allied with the dairy industry. A preliminary meeting was held Wednesday morning in the rooms of the San Francisco Dairy Exchange, the objects were explained to a large number of interested parties, and before the close of the session Acting Chairman W. H. Rousell put a motion to perfect a permanent organization, which was carried, and some fifty names were immediately signed to the membership roll, including the following: C. H. Reinoehl, Valley Ford; C. F. Riddle, Smith River, Del Norte Co.; Jules Jorgens, San Francisco; George E. Groft, San Jose; J. A. Pilander, King City; Wm. T. Mitchell, Adin; O. E. Jones, St. Helena; Joseph N. Kiser, Hollister; M. B. Tilden, Pylema, Kern Co.; Byron E. Frank, San Jose; H. F. Lyon, Alameda; W. H. Turner, Sierraville; Warren Myers, Woodland; George E. Peoples, San Francisco; W. G. Balis, Wheatland; Sidney S. Holman, San Geronimo; Arthur Schlunegger, Petaluma; D. Brough, Newman; L. J. Siple, Manchester; W. H. Nichols, Courtland; George G. Knox, Grafton; Frank L. Stevens, Bellota; E. N. Bell, Petaluma; W. R. Glass, San Francisco; W. S. Allen, Lockeford; Chas. Fisher, Castroville; L. Mason, Dixon; S. N. Nash, Oakdale; Nels Eriksen, Point Arena; F. C. Butler, Novato; George E. Newman, Lompoc; Allen Quain, Stockton; Jas. R. Murphy, Newman; E. H. Zimmerman, Watsonville; J. R. Murphy, Fresno; August Surtman, San Gregorio; W. W. Futrell, Hanford; C. C. Ridgeway, Hynes; A. J. Vine, Lemoore; P. I. Blim, Petaluma; J. H. Roussell, San Francisco; Leroy Anderson, Berkeley; J. A. Howe, Compton; W. A. Misenhimer, Hanford; J. H. Severin, Modesto; E. B. Willey, San Francisco; S. A. Ward, Ferndale; W. H. Saylor, San Francisco; M. P. Hansen, Humboldt; J. P. Pearson, Galt.

Purposes.—On Wednesday afternoon a session was held at the Dairy Exchange, at which a constitution was adopted, setting out the purposes of the Association to be the elevation of the business, the development of the dairy resources of the State, to secure proper remuneration for creamery operators, to hold conventions to discuss subjects relative to the art of butter making and creamery management, to act in unison in matters affecting the welfare of creamery operators, to conduct competitive exhibitions of butter, to conduct an employment bureau for the purpose of securing employment for creamery operators and butter makers. The membership fee was fixed at $5 and the membership dues at $1 per annum.

Resolutions were adopted authorizing the executive committee to arrange for a convention and butter exhibition, favoring the establishment of a dairy school in connection with the University of California and endorsing the Grout oleomargarine bill, which is before Congress.

Officers.—The following officers were elected for the ensuing year: President, Henry Lyons of Alameda; first vice-president, George Peoples of San Francisco; second vice-presidents, A. J. Howe of Los Angeles, L. J. Siple of Manchester, Mendocino county, M. P. Hansen, Alton, Humboldt county, and W. R. Glass of San Francisco, representing the four producing sections of the State; secretary and treasurer, W. H. Saylor of San Francisco. The executive committee is to be made up of the president and secretary, W. H. Rousell of San Francisco, E. H. Zimmerman of Watsonville and J. H. Severin of Modesto. Meetings are to be held annually and the business of

the Association is to be conducted by the executive committee.

EXHIBITIONS.—One of the principal clauses of the constitution calls for the holding of four competitive exhibitions each year—three in San Francisco, at the Dairy Exchange's rooms, and the fourth at the State Fair in Sacramento. At each exhibition the products of the various creameries will be scored by a board of competent judges, and an average of the four scorings will be taken at the close of the year to get the relative standing of the quality of the butters. The object of holding four exhibitions is to give all producers an equal chance, as at different seasons of the year the butter from one section far outclasses that produced by another section during the same months.

The Grout Oleomargarine Bill.

We have read with care, says the Rural New Yorker, the discussion which took place in the House of Representatives over the Grout bill. We think any fair-minded man who will read the arguments advanced for and against this bill will be forced to admit that its advocates had the better of it. They proceeded to state the extent of the business done in oleo, named the ingredients which enter into its make-up, and demonstrated that it can be made for less than 10 cents a pound, including the 2-cent tax. They then showed that 90% of the colored oleo is sold as butter, and detailed some of the tricks and fraudulent schemes which enabled dealers to practice this deception. This fraud is possible only when the oleo is colored yellow. It was shown that thirty-two States, containing 60,000,000 population, have passed what are known as anti-color laws—that is, laws which prohibit the use of yellow color in oleo. This is evidence that the majority of Americans do not want to pay butter prices for colored oleo. It was shown that in consequence of our systems of interstate commerce state laws will not permit the proper control of this fraudulent business. Congressman Henry, in summing up, made these statements:

"With such facts in evidence, who shall say that by the prevention of the fraudulent sale of colored oleo at prices nearly approximating the cost of butter, together with a reduction in the cost of the uncolored article of nearly 2 cents a pound, enabling its sale at a price not exceeding 15 cents per pound, the laboring man or another who chooses or is forced to use oleomargarine in place of butter will not be benefited? Certainly none can deny that the great consuming public should be protected from the grasp of unscrupulous manufacturers and trusts. If a combination of beef and hog fats, cottonseed oil and other waste or refuse products is to be made, colored and sold as a substitute for farmer's butter, then the manufacture and sale should be conducted openly and honestly, rather than secretly and fraudulently."

In answer to these arguments Mr. Wadsworth and others, it seems to us, dodged the real question. They quoted pages of testimony from scientific men to prove that oleo is healthful. This seemed useless, because this point had not been raised, but they did not dare go on and say that these same scientific men say that yellow oleo is a fraudulent product. They also had much to say about the injury to the poor by depriving them of a cheap food. The facts are that the Grout bill removes 1½ cents of tax per pound from the uncolored oleo, so that it can be sold at 12 cents a pound, with a profit of nearly 50%. They had two answers to the color argument. One was an attempt to ridicule it, one man going so far as to say that instead of oleo being colored to imitate butter the latter was really colored to imitate its greasy rival. The other was the claim that yellow is not the natural color of butter, and that wherever butter color is used a tax should also be paid. That is a fair statement of the arguments and we feel sure that any fair-minded man who will consider them will admit the justice of the dairymen's demand.

SHEEP AND WOOL.

Shall There Be Sheep on the Mountain Ranges?

This question is of continued interest and we desire to place before our readers some of the later phases of the discussion of it. Evidently the sheep are having the worst of it, but we are still not convinced that there is not some way in which the mountain and forest pastures can be used to advantage and without detriment to trees or water supply. In the Tulare Register there are two contributions to the understanding of the issue, which we present in somewhat condensed form.

AGAINST THE SHEEP.—One who signs himself "Friend of the Forest" writes thus: The subject is too serious to be trifled with; there are too many acres needing water and too many ditches that are dry, to turn back and take up an argument that, to my mind, was effectually settled years ago. That cattle are as destructive as sheep is simply absurd in the extreme, and no one but a sheep man would ever have the sublime nerve to make such a claim. I believe it is made without a full knowledge of general conditions, or with a deliberate purpose to deceive. I have no cattle or sheep, nor am I expecting to be interested in either; but if I should become a stock owner, I would provide water for lands in the valley and grow my feed, and not go to the mountains, where the feed is not very good at best.

I will say further that few, if any, of the sheep men who have lands within the forest reserve own more than enough to camp on, and expect to pasture 10,000 acres of Government land for every forty acres they own, and not one in ten who goes to the mountains has any land at all.

That the good sheep men can be allowed in and the bad sheep men kept out is another absurdity. That a proper number may go in, and only enough to "sorter" pasture the range down, is another absurdity. Past experience has taught us that to ascertain the correct number of sheep in a band is next to impossible. To verify this, I refer to all past assessors of this and other counties.

I am not defending the cattle men, for they do some harm, and it is my opinion that they should be kept out of the high ranges. That the country would be prosperous or desirable to live in with sheep as a "main chance" was demonstrated twenty-five years ago. Sheep men, as a rule, are those who expect to exist on the free pasture and largely cease to exist when the pasture ceases to be free.

That Uncle Sam should be required to furnish this pasture free to those people, to the detriment of the large and thrifty class who use the waters of our streams for irrigation, needs no argument.

We feel that it is unfortunate that an effort should be made at this time to undo for us what we have been striving so many years to accomplish and to create a false sympathy for a cause that needs no sympathy. Let the sheep man provide himself with feed for his flock, just the same as the farmer provides his means to meet his expense account. There is no more reason why the sheep men should have free range than that the Government should pay the farmer's expenses. The sheep man can prosper on the farm with the same frugal habits that are necessary to prosper the farmer.

France, Italy, Spain and other old countries of the continent of Europe have proven more than 200 years ago the value of reforestation, and laws were passed to prevent sheep and goats from grazing on the mountains, and the result within fifteen years was that the irrigated lands supported a population eight times as great by reason of the greater acreage irrigated by the greater water supply from the mountain streams, and the timber line was raised 1000 feet.

I have been in the mountains where sheep pasture and where they do not, and am surprised to hear any sane man claim that they do not destroy the young trees and the foliage generally. They prune every limb as high as they can reach and tramp the ground as hard as a road. The place where they do particularly great harm is above timber line on the side hill meadows which, by reason of having steep trails made through them frequently, begin to wash along the trails, and in a year the spongy meadow that once held back water for late summer use is dry and dead, and finally ceases to be a meadow. This is particularly the case in the Monachee meadows. That is to say, being more meadows within a given radius, the damage is probably more apparent. But these questions need no argument except to a sheep man or to his friend, and you might as well "sing psalms to a dying horse" as to argue with a sheep man on this subject.

A section of good alfalfa will produce more feed than any single township in the high mountains properly protected and forested which will add to the irrigable area not less than nine sections within five years. Therefore, the permanent damage done by the sheep I claim is more each year to the county than their gross value.

THE REGISTER'S REPLY.—John Randolph had so persistently fought a tariff on wool that he would go half a mile to kick a sheep, and a great many of our people have seen so much evil arising from the unlimited pasturage of our mountains by predatory bands of sheep that they would go a mile and a half to kick a sheep, and our correspondent is a good deal in that frame of mind. To say sheep to him makes him so hot that he is not only not just to the sheep man's contentions, but misunderstands the plain import of the Register's contention that it had "more than half an idea" that it would be possible for sheep to have access to certain ranges on reasonable terms in limited number and without detriment.

In the first place, no one should have a free range on Government land in the mountains or elsewhere. The rental should defray the cost of supervision and control. The contention that sheep men can not be contented and that sheep men who rent land can not be held to a strict accountability, is puerile. No ranges for any stock should be leased to any except responsible men, who will give bonds to obey regulations.

Neither sheep nor stock of any sort should be allowed in an area that is to be reforested until the trees are up out of harm's way, and they will get out of the way of sheep a good deal quicker than out of the way of horses or cattle. Which will do the most damage to an orchard—horses, cattle or sheep?

The best point our correspondent makes is that the sheep make little trails wherever they go, and so tend to drain the mountain sides quickly. We can see evidences of that on our foothills now. They are drained as quickly as though they were supplied with eave troughs, and this is unfortunate, and may prove a conclusive objection to sheep going into the mountains at all.

The Register's doctrine is this: "The reforesting processes of nature must not be interfered with, and the watersheds must be protected against devastation; but whatever use can be made of the mountains with the full safeguarding of these interests should be made of them."

That doctrine would seem to be within the comprehension of the average mind. There are men who want to lock our mountains up altogether. At the recent session of the California Water & Forest Association one man wanted to prohibit by law the building of any campfires in the mountains, thus shutting the tourists out. The sheep men want to shut the cattle out. The cattle men want to shut the horses out, and everybody wants to shut the sheep out. Others want all lumbering stopped. What the Register protests against is going from one extreme to the other. Let us scientifically ascertain the truth and apply it with intelligence, and not with prejudice or animosity.

All we ask for the sheep man is a hearing. If his case is weak, we do not need to fear it. If it is strong, we ought to be willing to do him justice.

But this much we must insist on: No man shall use the mountains to their hurt for forestation and conservation of waters. If camping in the mountains can not be permitted without fires, we must shut the campers out. If cattle and horses can not be allowed in the mountains without injury, we must shut them out. If lumbering can not be permitted without damage to the watersheds, lumbering must be stopped. If sheep can not be permitted in any part of the mountain range during the summer months, in any quantity, without injury, out they must go. But let us determine these matters by cool discussion, and not by hot denunciation. Let us find the right and establish it, and do it without inflicting a wrong, if we can. This is our doctrine.

THE POULTRY YARD.

Further Notes on Fowls.

Mr. A. Warren Robinson of Napa, whose letter in last week's PACIFIC RURAL PRESS was no doubt enjoyed by our readers, gives the Register of his town a few notes which he considers, we suppose, more local than those he sent for our wider parish. We find, however, so many suggestions in the Napa lesson of Mr. Robinson's teaching that we give it wider circulation.

INCREASE OF THE INTEREST.—Increased attention is paid to the raising of poultry, both for broilers and for eggs, in Salvador each succeeding year. On each farm in the district named there are flocks of from 50 to 200 fowls, but there are several persons who devote much of their time to the care of their fowls, relying upon them for a good share of their income. There is no better locality in the country for growing poultry of all kinds. There is no danger of overstocking the market—San Francisco. There is money in the business when conducted by men and women who have the requisite knowledge. The novice has to pay for his experience in any business.

The inducements to engage in the poultry business here are the wonderful adaptability of our locality and climate for the raising of healthy fowls, the assurance of good prices for eggs during most of the year, the impossibility of overstocking the market. During the last few years there has been more money made in raising fowls for laying purposes than for the table. Yet there are some persons who make a specialty of raising broilers for the San Francisco market. But while the prices for table fowls have for a long time ruled low, on account of heavy and frequent shipments from States in the East, the prices for eggs have, during most months of the year, been quite high.

There is no good reason why Salvador should not become as noted for extensive yards as is Petaluma. In mildness of climate we certainly have the advantage. We are as well situated as regards a good market. When first-class eggs command 40 cents or more per dozen for months at a time, and 25 and 30 cents at least most of the year, there is more money to be made in the business for the amount of capital invested than in any other enterprise.

For all that, it is a poor business for the inexperienced to engage in. This need not discourage any one desiring to invest in this pursuit, for the successful poultry raisers of to-day are those who have climbed the ladder step by step, profiting by their mistakes, which were not a few, in years gone by.

LEGHORNS AND MINORCAS.—For laying many and fine looking eggs, no fowls surpass the Leghorns—either the white, brown, buff or black—or Minorcas—either the black or the white. Some persons prefer fowls of a certain color, while their neighbor likes

another. In the large and numerous flocks in the neighborhood of Petaluma the White Leghorns seem to be the favorites. If one desires the best fowls for the table there are the Wyandottes, the Plymouth Rocks, the Brahmas, and the Cochins to choose from. Each variety has its advocates. Some of the last-named breeds combine large size with good laying qualities, but they lay a brown egg, and that is against them if one wishes to get the highest prices for eggs. In the Eastern markets the browner the egg the higher the price obtained for it.

The hatching season is again here. It is almost universally conceded here in California, and in the East as well, that it is not profitable to hatch chickens later than May. Early chickens may be hatched in November or December, but many prefer to wait a month or two later. The majority of persons engaged in this business use hens for hatching instead of incubators. The latter method is attended with far less work and care and the results are equally profitable, if not more so. No one should attempt raising hens on a liberal scale except with incubators.

How to feed poultry in the most profitable manner is a question that every person engaged in the business is intent upon solving. One must experiment, ofttimes repeatedly, before satisfaction is reached. The idea is to get the most eggs for the least expenditure of money. Pountry raising, in all its many details, requires great care and attention. The matter of feeding is not the least of these details by any means. Variety is needed. Not too much or too little must be apportioned the flock. They must be kept busy, for the loafer among hens is of little worth, as he is among humans.

Good, clean grain, either whole or ground, and clean vegetables are the prime requisites, never omitting a supply of animal food. This latter the hens must have to enable them to give best results. Fresh meat or ground bone cannot always be obtained, but meat meal takes the place to good advantage.

THE VINEYARD.

Table Grapes for Southern California.

By J. W. Mills, Pomona, at the Farmers' Club Institute at Riverside.

There is no reason why southern California should not raise the best table grapes in the world. We have every kind of soil that the different varieties require. No fruit tree or vine is less susceptible to drouth; the vines are easily grown from cuttings and can be readily increased even from a single vine.

The selection of cuttings is very important. The French, who are world renowned for their successful grape growing, select their cuttings with more care than is generally exercised by the most careful orange grower of southern California in securing his buds. They take only canes from the previous year's growth; all other branches are classed as suckers; on most vines these shoots will not produce anything. The most careful growers go through a vineyard and mark the most productive canes on the most prolific vines. This tends, they claim, to increase prolificacy; and desirable quality of a variety can be intensified by following this principle.

Pruning.—Some varieties of grapes will not produce at all if pruned short. This is because the first few buds next to the stock produce barren canes; if the vine is pruned short, the fruit buds are cut off. Some very rank growing kinds require long pruning in order to prevent a too rapid growth from a few buds at the expense of fruit clusters. When such vines are short of buds, those which would otherwise be fruit buds, produce canes. Some varieties, even when pruned long, are not productive unless the canes are bent between the buds and tied in the shape of a bow or hoop. This operation seems to retard the flow of sap and fruit clusters are thrown out. Those who are interested in pruning the vine should send for the bulletin issued by the Agricultural Department of the State University.

Mildew is something that every grape vine will be affected with if a fungicide is not used at the proper time. If sulphur is dusted over the vines as soon as the blossoms have dropped and again as soon as the fruit is set, the disease will be held in check. The most convenient way to apply the sulphur is to put a few pounds in a closely woven grain sack and give it a sudden up and down jerk over each vine. After the vines are pruned in the winter it will prove profitable to spray the trunks and the ground beneath with a solution of clear bluestone water, one pound to twenty gallons of water. A stronger solution will not hurt the vines. Sulphuring must not be dispensed with.

Varieties.—A good selection of varieties of table grapes can be made at the Southern California Agricultural Station. Out of over 200 varieties, there are at least fifteen that are high class table grapes. That is exclusive of Muscat, Black Morocco, Tokay, Gross Coleman and Emperor. We will have them in the order of their ripening.

Luglienga is a tender, sweet, amber grape that ripens in July; it is a shy bearer and a long pruner, in quality it will compare favorably with the best varieties that ripen later. It is worthy of more extended trial.

Khahallee is a Persian variety that follows and is about the same style of grape; amber colored and a long pruner.

Chasselas Rose is a very weak growing vine, but is fairly prolific and of good quality. Small bunches, berries a handsome rose color. Short pruner.

Golden Chasselas follows with large loose bunches, fruit amber colored. Quality good, very prolific. A long pruner.

Black Sheehanee—A Persian variety, very prolific, large, loose bunches. Berry small to medium, good flavor. Long pruner.

Persian No. 21—Large bunches, berries large, crisp and fine flavor. One of the best white grapes. Moderate bearer; long pruner.

Blue Portuguese—Black type of the Mission type, Cinsaut; the best black grape up to this period, August 20th. Very prolific, large, compact, handsome bunches, fine flavor. This and Black Malvoise are almost alike. The latter is a little later and has smaller bunches and berries.

Cinsaut is remarkably vigorous, retaining healthy green foliage during drouth when surrounded by ranker varieties that show the effects of drouth much sooner. A short pruner.

Damascus ripens late in August. A large grape, prolific. Handsome and of fair quality, bunches loose, thinned by culture.

Olivette de Cadinet—A large, white, crisp grape that ripens early in September, but will keep well on the vine till well along in October. Bunches and berries large. Vine a short pruner, very strong grower.

Muscatello Fino—Medium sized black grape, very sweet, strong Muscat flavor. Bunches small, shy bearer.

Black Muscat—A cross between the Muscat and Black Hamburg. Berries round, sweet, high flavored with a trace of Muscat.

Cheevooshee—The best of the Persian grapes at the Station. Bunches and berries large, crisp and fine flavored. Vine a strong grower and prolific. A long pruner. The canes must be bent to force out the fruit clusters.

Verdale—Large, white, tender grape. Flavor medium. Vigorous and prolific. Short pruner.

Napoleon—Large bunches, white and very prolific. Comes into bearing the second year. A good, late variety. Ripens late in October. A short pruner.

Cipro Nero—The best late purple grape at the Station. Bunches and berries large. Handsome, prolific and of fine flavor. Main crop is in good condition in the first of November. Bears second and third crop. Bears well with long and short pruning.

Almeria—The latest at the Station. Bunches and berries similar to Muscat in appearance. Tough and a good keeper; will keep for the holidays. Should be pruned long on permanent trellis limbs.

BAKER & HAMILTON, SAN FRANCISCO, CARRY A COMPLETE LINE OF SPRAY PUMPS.

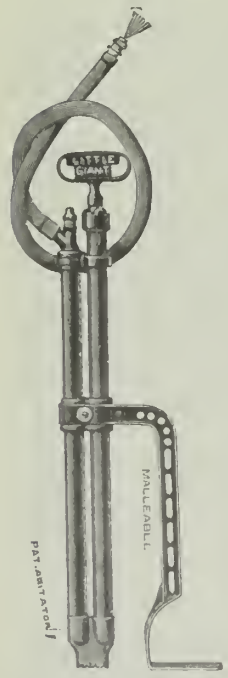
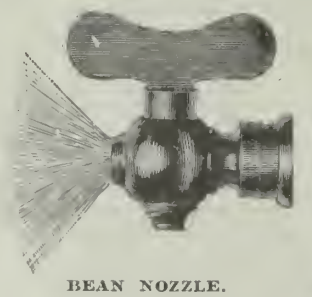


FIG. 639.

FIG. 551.


BEAN NOZZLE.

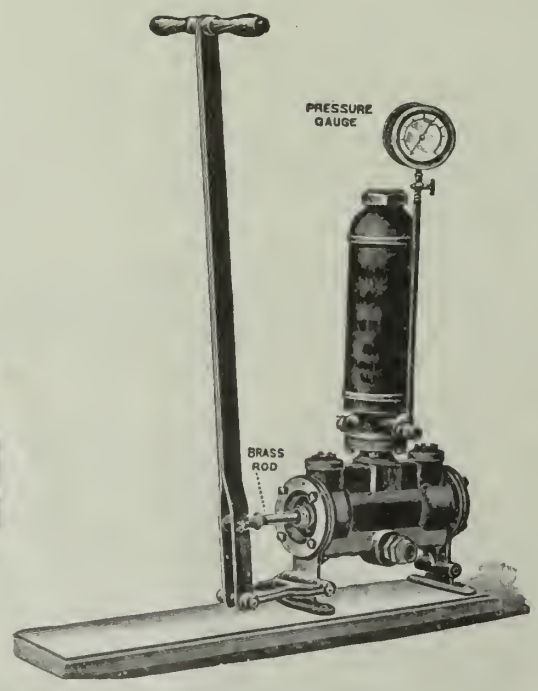


FIG. 799.

FIG. 550.

FIG. 552.

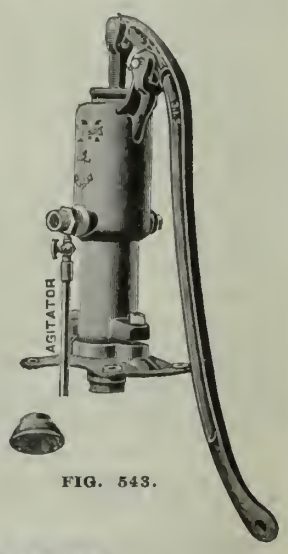


FIG. 543.

FIG. 642.
IMPERIAL SPRAY NOZZLE.

BEAN CYCLONE NOZZLE.

HOP NOZZLE.

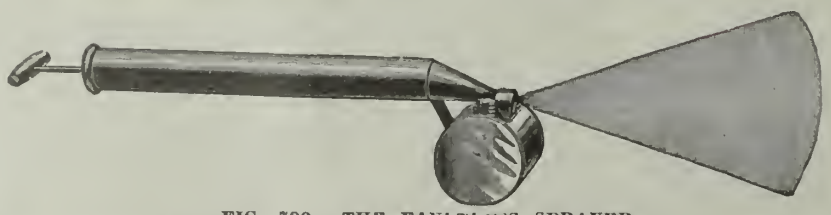
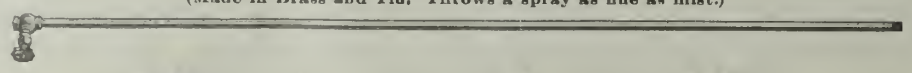


FIG. 790.—THE FAULTLESS SPRAYER.
(Made in Brass and Tin. Throws a spray as fine as mist.)


EXTENSION, 6 FT., 8 FT. AND 10 FT. (PIPE OR BAMBOO).

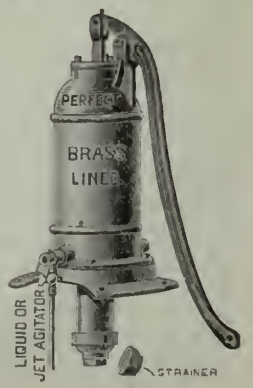


FIG. 653.

Agricultural Review.

ALAMEDA.

ALAMEDA COUNTY FRUIT PRODUCTS.—The following is from the report of William Barry, secretary of the Alameda County Horticultural Commission: There is a lively demand for some varieties of deciduous fruit trees; ornamental stock also meets with a good demand. Nearly 20,000 trees of all kinds have been handled at Niles station the past month. Among the arrivals of trees were two consignments from the East which were found to be badly infected with peach root borers. Of one consignment of 15,000 trees about 6% were found to be infected: in the other lot of 1900 trees, 1155 were found to be infected. Those with the borers were burned and the clean stock was dippod, roots and tops, in strong disinfectants. This shows conclusively the danger of importing Eastern nursery stock into this State. Oregon stock is also infectod. The California Nursery Co. has erected a building in which to disinfect trees with hydrocyanic gas. It has two compartments—one with a capacity of 1000, the other can accommodate a wagon with 5000 trees on it. This is the only building used for that purpose in any nursery this side of the Rocky mountains. The fruit crop of Washington township for this year is given below, showing the number of pounds of ripe fruit handled by the E. A. Ellsworth and Niles driers, also the amount dried and shipped to canners and San Francisco markets and the quantity of almonds shelled with value of all varieties:

	Ellsworth	Niles Co-operative	Home dried	Value
Apricots	1,380,248	388,230	1,690,000	$ 34,584 78
Cherries	.....	.....	520,000	23,400 00
Peaches	130,348	44,308	1,020,000	11,946 56
Plums	241,749	4,603	420,000	4,997 64
Prunes (French)	1,632,210	1,139,803	1,350,000	15,457 00
Prunes (Silver)	254,912	98,410	220,000	6,457 50
Prunes (others)	64,664	483,974	72,000	4,654 75
Pears	27,202	1,193	664,000	5,193 00
Almonds (shelled)	181,672	.....	26,000	25,959 00
Almonds (meats)	19,527	6,000	.....	5,181 21
Totals	3,932,532	2,166,521	5,982,000	$137,331 44

BUTTE.

ORANGE SHIPMENTS AND EXPENSES.—Oroville Register: The shipments of oranges this year from the Hearst grove in Palermo was seventy-five carloads of 360 boxes for each carload. This gives 27,000 boxes from the one grove. The cost of the boxes alone, estimating each at 12½ cents, would amount to $3750. The cost of making the boxes, wrapping the oranges and putting them into the cars amounted to $2000. The contract was let to twenty Chinamen, who worked for two months at this work. Seven cents a box was paid for wrapping, boxing and putting into the cars. Thus it cost nearly $6000 outside of the picking before the fruit was shipped. When to these figures we add the cost of fertilizing the land, irrigating, plowing and cultivating it, it will be seen that a good round sum must be received to get back expenses.

MAMMOTH ORANGES.—Stockton Independent: John Balkwill received a present of Oroville oranges, which are beautiful samples of wonderful development of orange culture in the northern fruit belt. The oranges were very large, measuring from 14 to 16 inches in circumference, and were of perfect color and faultless flavor. They came from the home place of Capt. Batchelder, county clerk of Butte county.

THE FLOWERS OF SPRING IN BLOOM.—Oroville Register, Jan. 3: The old song speaks of the flowers of spring, but in this wonderful climate of the northern citrus belt, where the orange with its green and gold is a beautiful sight, where the lemon hangs with luscious fruit every month in the year, and where the lime, the loquat and the guava find a congenial home, the flowers bloom even in midwinter. Both T. C. Lee and Mrs. W. P. Hammon assure us of the fact that the lovely California poppy, the big, yellow one that is so bright and golden, is in bloom. Mrs. J. C. Osgood of Merrimac tells us that even at her mountain home, which is more than 3000 feet above the valley, the peas are in blossom. If our friends from Maine, New York and Dakota could drop into the Sacramento valley at this season of the year and find the oats tall enough to head out and the flowers in bloom, they would fancy they had found an earthly paradise.

AN ORANGE FREAK. — Biggs Notes: W. M. Doty has an orange that was grown on his place that is a freak. The peel on three-fourths of the orange is natural, and the other one-fourth is very smooth and resembles a lemon. It has grown in this way and is as even as though it had been cut with a knife.

COLUSA.

ORANGES ON THE PLAINS.—Colusa Sun: Col. Kissling, who resides 4 miles north of Williams, has some very fine oranges on his place. They are large, and the color is a very rich, reddish yellow. As Col. Kissling remarks, the land is all right, and, if we do not produce citrus fruit in at least sufficient quantity for home use, it is the fault of the people.

INYO.

IMPROVING HIS CATTLE.—W. D. Roberts, Fairview Creamery, Round Valley, has lately received a bull (Rioter's Pogis of Inyo 59104) from Miller & Sibley, Franklin, Pa. The sire is Ida's Rioter of Prospect 45285, dam Hazel Pogis of S. H. 82488, milk record 50½ pounds a day, butter test 18 pounds 10 ounces. The dam is a granddaughter of Stoke Pogis 5th and the sire is a son of Ida's Rioter of St. Lambert. Stoke Pogis 5th has twenty-four tested daughters and 164 tested granddaughters; Ida's Rioter of St. Lambert has thirty-two tested daughters averaging over twenty pounds in seven days, leading all other bulls in this respect; Ida's Rioter of Prospect is four times descended from Stoke Pogis 3d, who for many years led all other bulls in the average record of twenty-six tested daughters; his dam, Bess Pogis of Prospect, has a butter record of 29 pounds 1¾ ounces in seven days, a milk record of 64 pounds in one day and 11,187¾ pounds in one year; his paternal grandam, Ida of St. Lambert, gave 67 pounds milk a day and made a butter test of 30 pounds 2½ ounces in seven days; with such a magnificent record of performance behind him, Mr. Roberts' calf is entitled to be a good one.

LAKE.

GOOD WINTER FOR ANGORAS.—Philo Green, Upper Lake, in Rural Northwost: We are having a fine winter for goats so far. They have plenty of feed, and are doing well for everybody, so far as I can hear. Goats have been advancing in price rapidly for the past few months. High-grade Angora nannies are now selling at $5 per head, and flocks, half nannies and half wethers, at $3 per head. Second-grade nannies sell at $4 per head. This is an advance of $1 per head in the last three months. The majority of the goats here are high-grade Angoras. Registered Angoras are selling at $50 for first choice bucks and $25 for second choice. Registered nannies at $25 for first choice and $15 for second choice. Several thousand goats have changed hands within the past year.

LOS ANGELES.

HEAVY SHIPMENTS OF CITRUS AND OTHER FRUITS.—Pomona Times, Jan. 2: About 1600 cars of oranges and 93 of lemons were shipped from Pomona and vicinity the past season. Of these, the San Antonio Fruit Exchange sent 898 cars of oranges and 48 cars of lemons. This organization is a branch of the Southern California Fruit Exchange, and is made up of the Pomona Fruit Growers' Association, Indian Hill Citrus Union, Claremont Citrus Union, the San Dimas Citrus Union, the San Dimas Lemon and Claremont Lemon associations. Manager Dreher of this Exchange estimates that the organization will ship 1250 cars of oranges and 150 cars of lemons during the season now entered upon. There will be a large increase also this year in the amount of oranges and lemons shipped by private firms. In order to care for this increasing citrus output, it has been necessary to enlarge all of the Exchange packing houses hereabouts. Ten cars of tomatoes, ten of apricots and fifty of peaches and pears were canned by Waters & Pitzer at the Pomona cannery this season, giving employment to about 400 workers during the busiest time. The cannery's capacity is being increased by the addition of a large new fruit cooking room and new machinery, so that from 35,000 to 40,000 cans may be put up daily. The largest shippers of dried fruits, walnuts and raisins here report $500,000 worth of business done during the season.

ORANGE.

A HEAVY WIND STORM AND SOME DAMAGE.—Anaheim Gazette, Jan. 3: On Thursday and Friday a heavy wind storm prevailed at Riverside. It came down the Santa Ana canyon, and, sweeping over Orange and Santa Ana, enveloped the hills to the east in clouds of dust. No wind prevailed here on Thursday to any great extent, although the day was raw and disagreeable. The coast breeze on Thursday afternoon held the east wind in check; but at nightfall, when the former subsided, the "Santa Ana" achieved great headway and blew boisterously throughout the night. Clarence Lincoln received the full benefit of the storm on his mail route, embracing Olive, Yorba and the oil wells. Gravel stones as large as peas were blown in his face. At Riverside considerable damage was caused by the gale.

WALNUT CROP. — Anaheim Gazette, Jan. 3: The Fullerton Walnut Growers' Association has issued its annual report. The amount to be paid to members of the association for the season's output is $82,225.90. The net gain of the crop amounts to $3914.85. The expense of handling the crop was $39.36 per car, a saving over 1899, when expense was $45.43. The prices fixed for waluts belonging to or under control of the united associations were 10 cents a pound for No. 1 softshells; 9½ cents per pound for No. 1 hardshells, and 2 cents less per pound for No. 2 of both grades. From these prices a discount of 6% was allowed the brokers. The other walnut growers' association of Fullerton shipped 589,499 pounds of walnuts, receiving for the output $56,205.88. The Fullerton walnut crop this year sold for more than $175,000. Prices were the highest in ten years.

SAN BERNARDINO.

COLDEST WEATHER IN FIFTEEN YEARS.—San Bernardino Sun, Jan. 3: New Year's night was the coldest in this city in fifteen years, and for how much further back there is no present way of telling. At the local weather bureau the mercury touched 18° above zero, while many unofficial thermometers reported a temperature of 17°. Tuesday night was the culmination of the cold wave that has blanketed the Southland since Sunday. For nearly a week a bleak, cold wind has poured frigid temperature down from the north, and Sunday all day the air was chill, and before midnight the mercury had passed the freezing point, and a minimum of 23° was reported at this station. That did little or no damagc in the orange district, however, for all of them are slightly warmer than here in town, and 26° for a short time was the coldest that was reported, smudging being resorted to in many orchards. Monday evening clouds came up and a sprinkle warmed the air until 27° was the lowest point reached. But Tuesday night was different. All day long the air had been chill and by midnight the mercury had fallen to 25° here in the city, and kept falling until by morning it registered 18°. Colton Terrace and Rialto seem to have been the most favored localities in the valley, the warm soil of the Terrace, together with a breath of north wind, keeping the mercury from going lower than 27°. In Highland, 25° is given as the minimum, 24° in Redlands, 21° in some parts of Idlewild and along the Santa Ana, 21° in Colton and 22° in Riverside. What the results of the frost have been cannot yet be stated. That there has been some damage done to the oranges on the trees is probably true in those districts where the cold was most extreme. Smudging was universal where orchards were fixed for it, the effect being marked. Col. H. L. Drew says that at his big Idlewild ranch the fires were lighted soon after 10 o'clock and kept going all night, and the mercury at no time went lower than 24°. Col. Drew also says that he was all through his orchard yesterday afternoon and cut open perhaps 100 oranges, looking for evidences of frost, but could find none, although the young growth on the trees showed the effects of it. Riverside went to work with a vengeance yesterday morning to get its crop to the market, all sorts of people being pressed into service to gather the oranges. Growers hereabouts have enough faith in their orchards having come through unscathed that they will not rush their fruit to sale, but will await developments.

SAN DIEGO.

CULTIVATION OF THE JELLY PLANT.—San Diego Union: The perfection of culture of the roselle, or jelly plant, has been attained by Mrs. C. W. Siedel of El Cajon. The plant, which grows vigorously in the warm, decomposed granite soil, will bear more blossoms if not watered too much. It makes a most excellent jelly, much in color and taste like the cranberry. To make the jelly, the pods, either green or dried, are put in a kettle and well covered with water, boiled for half an hour, then the water strained off and mixed with equal weight of sugar, as in making other jelly, and it is so albuminous it seldom fails to "set." The plant is very ornamental, of the hibiscus family, with pale yellow blooms, which contrast richly with the scarlet pods.

SANTA BARBARA.

ROOT ROT OF WALNUT TREES.—Press, Jan. 1: The Santa Barbara Horticultural Society held its regular monthly meeting last week. Mr. Cadwell reported that he was cutting down the walnut trees in his orchard on account of root rot, which brought forth considerable discussion. J. McTear thought the disease was the result of old wood and decaying roots left in the soil, as they formed a nursery for the fungus that caused the trouble. W. H. Morse stated that the fungus attacked the trees and shrubs close to the ground, developed itself in the inner bark of the tree and then extended to the roots, death being delayed for a year or two, but finally claiming its victim. He also stated that the fungus was not particular as to the species of tree attacked. Mr. Kahles reported a communication from Florida, and gave the treatment they were experimenting with; but all were of the opinion that it was an important question and needed a good microscopist to work on it, as it was of vital importance to the fruit growers.

SOLANO.

ORANGES GROW ALL RIGHT IN SOLANO.—Dixon Tribune: Some of the best oranges we have seen in the local market this season were grown on the lands of the M. S. Currey estate. In discussing the adaptability of oranges to this section, Mr. R. J. Currey says that the orchard from which the above fruit was picked has never failed to mature a full crop of oranges. Good oranges, as is generally known, always command good prices, and the fact that a superior quality of fruit can be grown in this vicinity coupled with the assurance that a crop failure is as yet unknown, are suggestions that are worthy of serious consideration. Irrigation is necessary, but it has been demonstrated that plenty of water can be obtained from the ground at an easy depth and the coming of the electric power to our midst should develop the orange growing industry and numerous other crops that lands are capable of producing under proper management.

SONOMA.

HEAVIEST STORM FOR YEARS.—Cloverdale Reveille, Jan. 5: Not for years has a rain storm of such magnitude prevailed in this section as was the case Wednesday and Thursday. The rain began falling Tuesday evening and continued without cessation until Thursday midnight. At times the wind blew quite heavy, making it cold and disagreeable. The river soon rose to a raging torrent and Thursday evening it covered the whole distance from the cemetery hill to the Shelford lane, and was within 2 feet of the floor of the iron bridge. At low water mark the bridge is 30 feet above water, so that fully 25 feet of water was running under the bridge. Part of the approach to the bridge was washed away and it was marvelous that the rest held together. Around the depot and on Railroad avenue the water was in places 1 foot deep. Other places in town were in a similar condition and gutters were regular rivulets. Considerable damage was done to fencing and many trees were uprooted and washed away. The fall for the storm was over 5 inches.

TULARE.

FARMERS ORGANIZING AGAINST GUNNERS.—Visalia Times: An organization composed of farmers and stock raisers is being formed, to be known as the "Anti-Gun Club." The object of this organization is to protect live stock and other private property from the devastating influence of guns in the hands of careless or reckless people; to make common cause against a class of people who persist in invading premises which have prohibitory notices posted thereon; to petition the honorable Board of Supervisors to levy a high per capita tax on dogs of all sorts and sizes, and to prohibit the importation of Mongolian pheasants into Tulare county. It is expected that this organization will assume considerable proportions.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid**, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O

THE HOME CIRCLE.

Contrast.

Written for the PACIFIC RURAL PRESS.

With lightning wings the moments fly,
When pleasant themes engage the mind;
Or when a parting-time draws nigh
To leave those whom we love behind;
But moments pass with leaden wings,
While pain or sorrows rack the brain;
Or while we wait the hour that brings
Some loved one to our side again

So when impatient childhood waits
The promised joys of future years;
When lapse of time it contemplates,
The distance far remote appears;
But when man's mind the past surveys,
Weeks, months and years,—how brief they seem!
Past months seem short as present days,—
The years, small parts of Life's strange dream.

San Francisco. J. R. RUCKSTELL.

The Doctor's Complicity.

It had rained all day, in fact, I do not think we had had another such day since away back in the early spring, and as evening approached the storm continued without any abatement of its strength. I was passing the telegraph office on my way home from making my afternoon calls, when a boy who was just coming out of the door spied me, and called out:

"Hi, doctor! Stop a minute. Here's a message for you that I was just going to take over to your house."

A moist envelope was thrust into my hand, but I did not open it until I was safely within doors. Then my spirits fell as I unfolded the enclosure and read:

"Come at once, or only death certificate will be required. Mince pie.
"Sarah Walsingham."

I knew that there was but one course open to me, and that was to go. Notwithstanding the wording of the telegram, I did not apprehend any fatal results as a consequence of Mrs. Walsingham's imprudence, but I appreciated that any appearance of neglect or indifference on my part at such a time might very easily lead to a severing of our relations, and I had five children to bring up and educate.

I went upstairs and told Louisa, and then, having put on dry clothes and eaten a hurried tea, I set forth on my journey. There was no up train after five o'clock, and as I had not received the telegram until a quarter past, I was left no choice but to drive all the way out to Glenmore.

Mrs. Walsingham's trouble yielded readily to treatment, but, with the recollection of her suffering still fresh in her mind, she was loath to let me depart. The result was that it was half past ten o'clock before I found myself on the road, with old Kate's head turned towards home. It was still raining, but the sky, which had been a great, undefined expanse of black during my drive over was now occasionally rent by flashes of lightning. As we drove on, these flashes began to follow one another in more rapid succession, and the thunder, which at first had seemed hardly worthy of notice, came nearer and nearer, until the peals were crashing ominously over our heads.

The lightning had given me an opportunity of discovering that we were nearing an unoccupied country seat that was about a mile from Glenmore village. This place, which had been at one time the summer residence of a wealthy Bostonian named Grayson, had extensive grounds in the midst of which the house was located. The owner had died several years before, since which the property had been in litigation, with the result that it had fallen much into disrepair.

I knew that the stable was near the gate, and I had noticed when passing that the door was secured only by a rusty padlock and staple, which it would require no great effort to remove. Quieting my conscience with the argument that trespassing was pardonable on such a night, I drove in at the gateway, and up to the stable, where I got out, and found to my surprise that the door was partly open. Pushing it along so as to widen the entrance, I led Kate inside, where I discovered another horse and vehicle already in possession.

Supposing that some other belated traveller like myself had sought shelter from the storm, I took the lighted lantern, which was fastened under my buggy, and looked about for the owner of the conveyance, which was a box wagon with two seats. I peered into the stalls and the empty harness closets, and up the narrow stairs that led to the loft at the top of which was a door, which I found to be securely bolted on the outside.

There was apparently no one about, so having given Kate a gentle pat, accompanied by the promise of a bran mash when we should be at home, I sat down on the stairs prepared to wait until the worst of the thunder had passed.

I had been there some five minutes when I became conscious of another presence, and, looking along the wall near which I was sitting, my startled gaze encountered a strange sight. Standing against the wall, not more than two yards away, was a covered feed box, about 6 feet long and 4 high. The top was lifted a few inches, and looking out at me through the opening was a woman's face.

I jumped to my feet with an exclamation of surprise, and at the same moment heard an imploring "hush" from the feed box.

"Who are you, madam?" I asked suspiciously.

The woman threw back the cover and arose to her full height, and I saw then that she possessed great personal attractions. She was tall and slight with a presence that might be called queenly, and I do not think there are many women that could look queenly standing in a feed box. She had a clear, white skin, large, gray eyes, and an abundance of light hair.

As I approached the lady stretched out a well-shaped hand, and grasped my arm.

"Oh, sir; I am in great trouble," she said; but you can save me if you will."

Her tone was piteous, and her evident distress aroused all the chivalry in my nature.

"How can I help you?" I asked gently.

"By getting me away from here without delay," was the hurried answer. "I have gone through a most dreadful experience in the last twenty-four hours; I will tell you about it as we drive along, if you will have the goodness to take me to the nearest railway station where I can get a train for New York."

I stepped to the door, and, looking out into the night, found that the cloud which had burst over our heads had spent itself, and that the thunder was rumbling off toward the south.

When I returned the lady had gotten out of the feed box and was standing beside my buggy, grasping the handle of a good-sized traveling bag, and wearing a neat little hat. I noticed that her dress was soaking wet, and that a pair of gloves which she carried had received a drenching that had terminated their period of usefulness.

"Don't let us lose any time," she begged, and she tucked her bag under the seat of the carriage, and sprang in lightly after it.

My companion gave a sigh of relief, as we drove out of the gate, after which for nearly a mile she sat beside me in silence. At last arousing herself with evident effort, she spoke:

"I appreciate your great kindness, sir, and I will now give you the explanation to which you are entitled. My home is in Boston, but owing to ill health, my husband has been obliged to give up his business there and seek employment in a warmer climate. Some week's ago he succeeded in obtaining a position in Caracas, Venezuela. He engaged passage on a steamer which sails early to-morrow morning, and all our arrangements have been made. He left for New York with the trunks on Tuesday, and I should have joined him there last evening, but for this horrible mishap that befell me."

She paused for a moment to regain control of her voice which had trembled at the recollection of what she had experienced.

"I don't know whether you will believe what I am going to tell, for it sounds more like fiction than truth," she continued presently. "I spent the night before last with my sister at her country place, which is 25 miles this side of Boston and nearly 6 from the railroad. Her coachman was driving me over to the train yesterday afternoon, when, as we were passing through a lonely bit of woods, we were set upon by two armed and masked men, one of whom held a pistol to the driver's head. The other took my purse, which I gave up without resistance, thinking that they would then leave us, but the thief jumped into the carriage, and the next moment I was breathing in something sweet and stupefying. I remembered nothing more until I came to in the house belonging to the stable in which you found me."

"The Grayson house!" I exclaimed. "Why, it has not been occupied for three years."

"Exactly, and it was therefore a convenient place for those wretches to hide me. Oh, sir, I passed a most wretched night, as you may well imagine. Perhaps you have a wife of your own—"

"I have, madam, and five children," I replied promptly.

"Then try to imagine her in my position," she went on, "locked in an upper room in that musty old house, which is apparently far from any habitation, and in the power of two unscrupulous men, who told me that they intended to keep me a prisioner until my husband had paid a large sum of money for my ransom."

I could not somehow imagine Louisa as a victim of a kidnapping episode. The part did not seem to suit her.

"They brought me food, but I almost feared to eat it," pursued the lady, "and I have been faint for want of nourishment. I have never seen either of the men without his mask, but this evening I recognized quite plainly that the one who brought me my tea had been drinking heavily, I kept thinking of this after he had gone, and felt encouraged to try and escape. I thought that they would both probably fall into a drunken sleep as the evening wore on, for they doubtless felt I was safe on a night like this, behind a doubly locked door and with the window 20 feet from the ground. But they did not know that I was something of an athlete, and that the thick vine that grows up the side of the house at a distance of hardly a foot from that particular window, seemed to me to afford a comparatively easy means of descent."

"What, you don't mean to say that you climbed down that vine?" I cried.

"I certainly do," was the half-laughing response.

"But your bag!" I exclaimed.

"Oh I dropped that down on the soft turf before I got out myself. You see the way I come to have the bag at all is that the thieves must have brought it, thinking it might contain something of value; but when they found nothing but clothing and some books that I was taking to read on the voyage, they returned it to me."

"You have certainly had a most remarkable adventure, madam," I said. "And I wish to congratulate you not only upon your escape, but on the pluck and determination that accompanied it. Why, not one woman in a thousand would have had the courage to attempt what you did. I only hope those miscreants may receive the punishment they deserve."

"I don't think I care very much whether they do or not, now that I am safe," was the reply. "My only desire is to reach my husband; and I am going to ask you, sir, to say nothing of this matter to any one until after noon to-morrow. You could not report the matter to the authorities without giving them a clue to my whereabouts, in which case I should inevitably be detained as a witness. My husband and I must sail to-morrow morning; his health requires it, and we cannot afford to lose the passage money."

"But my dear lady—" I ejaculated.

"I know what you are going to say, that I am asking you to stand in the

BROWN'S BRONCHIAL TROCHES

"The best preparation for colds, coughs, and asthma."
MRS. S. A. WATSON, Temperance Lecturer.

"Pre-eminently the best"
REV. HENRY WARD BEECHER.

MY SISTER'S BABY

My baby is full of abounding life and joy; my sister's boy is a puny thing.

The difference is: my baby is healthy. He takes his fill and sleeps; and he grows. My sister's boy gets fully as hungry, he cries with hunger; then cries, I think it must be, from weakness; his food is a burden to him.

Scott's emulsion of cod-liver oil will set that poor little boy in the way of being as good as his cousin.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

GLENN RANCH,

Glenn County, : : : : California,

FOR SALE

In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

ATTENTION!

To close out, I offer for sale all my VINEYARDS and CITRUS LANDS, ALFALFA and STOCK RANCHES, OIL lands, HORSES and MULES (single or in carload lots). All must be sold. Call on or address

L. F. WARD, 537 So. F St., Fresno, Cal.

CITRUS LANDS.

Also improved and unimproved vineyard, orchard, grain and alfalfa lands, and stock ranches.

—SOLD ON EASY TERMS BY—

C. R. SCOTT, TULARE, CAL.

way of justice and all that," she interrupted. "But just look at the matter calmly for a moment. In the first place, my sister has, of course, heard from the coachman about the attack upon us and my subsequent disappearance, and has without doubt put the matter into the hands of the police; therefore the machinery of the law is already at work; and should the men be caught, there is always the coachman to testify against them. I am the person principally concerned in this affair, and having gotten off without anything worse than a bad fright and the loss of my pocketbook, I do not feel called upon to seriously inconvenience myself, and put my husband to an expense that he can ill afford, in order to appear against two men whom I could not identify, since I have never seen their faces."

"But if I take no steps in the matter they may escape before to-morrow!" I exclaimed.

"They may have done so already," returned the lady. "They will hardly remain after they discover that I have gone."

As I thought it over I began to see certain advantages to myself in a course of silence. I felt that Louisa would disapprove highly of my being mixed up in a criminal case and would consider it detrimental to me professionally. And so within sight of the depot I gave her the required promise.

As we drove up to the steps my companion jumped out quickly, taking her bag with her, for the train was whistling only a short distance away. Suddenly remembering that she could have no money, I unbuttoned my coat and took out my pocketbook.

"You will want something for your fare," I said apologetically.

"I was forgetting about that," she answered. "Five dollars will be enough. Thank you. I will return it by mail. Your name is—"

"Dr. Charles Littlefield," and she turned and hurried toward the train, which was puffing loudly at the other side of the station.

The next day was an unusually busy one for me, and it was not until evening that I found time to sit down and read the morning papers. I was looking over the political news, when Louisa, who was reading the evening paper, gave a characteristic exclamation, which she only used upon rare occasions.

"Great powers and mercy, Charles, we might have all been murdered in our beds. A gang of desperate thieves has been hidden in the Grayson house not 5 miles from here."

I trembled in anticipation of what was coming, and held on to the arm of my chair.

"What do you mean, Louisa? Read the article aloud," I said faintly.

It seems that three night before, on the 13th, the store of one of the largest dealers of precious stones and silverware in Boston had been robbed of jewels amounting to $20,000. The watchman had been overpowered and chloroformed, and the safes opened with a dexterity and neatness that evidenced and experienced hand. The job was believed to be the work of Buck Finney's gang, all of whom were well-known to the police. The detectives had lost no time in confirming their suspicions, and had gotten a clue which enabled them to trace the burglars, who were traveling by slow stages to New York.

The account went on to say:

"Three of the men were suprised and captured at nine o'clock last night near Glenmore, in the untenanted house which belonged the late Mr. Grayson; but the jewels were not found in their possession. It is now thought they are in the keeping of a woman belonging to the gang, who goes by the name of Madge Wilson, alias Blonde Bess, and who is supposed to be hiding in Boston. The woman was at one time on the stage, and is said to be handsome and well educated. The officers brought their captives to Boston on the freight train which stopped at Glenmore at midnight."

Nervous excitement had accelerated the action of my heart, and induced a profuse perspiration, which gave me an unpleasant feeling. I made no comment but I was thinking how much information I could give the detectives if I chose for had not my respectable buggy harbored Blonde Bess and the bag, which I now felt confident containted the jewels, for a distance of nearly 5 miles? Had not I, Charles Littlefield, M. D., assisted her to escape from under the very noses of the officers of justice, and had not I given her of my honestly earned money, and paid her compliments, and wished her well, and promised her anything she asked, and—"

"What is the matter, Charles? Have you taken cold? You are shivering as though you had the ague?"

Louisa's voice recalled me to the present, and I answered.

"I was just thinking that I must have passed the Grayson place last night, while they were there, the—criminals, detectives, and all."

I felt that the time was past for telling what I knew to the police. It seemed to me that the recital would only make me an object of ridicule, without assisting in the recovery of the valuables, for I had no doubt that what the woman had said about her intention of sailing that morning was the one part of her story that was true. She was probably by this time safely out on the high seas and on her way to a place of safety. As time passed and the police failed to produce either her or the jewels, I became convinced that I had been right.

The three men were tried and convicted on the testimony of the watchman, assisted by circumstantial evidence, and are now serving long terms.

One morning, nearly six months after my adventure, I received by mail an envelope containing a $5 bill, and bearing the postmark of a place in Spanish Honduras, a country, by the way, with which we have no extradition treaty. It was addressed in a feminine hand, and I needed no one to tell me who it was from, but I have never been able to understand why a woman who was capable of making off with $20,000 worth of stolen property should have taken the trouble to return the small sum that I had lent her.

I was glad that Louisa had not seen that postmark for she might have asked some awkward questions. My midnight ride with Blonde Bess is something which I have never spoken about to my wife. One can never tell how a woman will view such matters, and I had a feeling that Lousia would see something reprehensible in my conduct on that occasion. As any rate I shall continue to hold my peace.—New York Evening Post.

Little Edith had been to church for the first time, and on her return her grandma asked her how she liked it. "I didn't like the organ very well," was the reply. "Why not?" asked the old lady. "'Cause," answered Edith, "there wasn't any monkey with it."

"And now, my children," said the teacher, who had been talking about military fortifications, "can you tell me what is a buttress?" "Please, ma'am," cried little Willie, snapping his fingers, "it's a nanny goat."

Fun Has a Valuable Side.

"Show me a man who does not appreciate humor," said John Kendrick Bangs to me, "and I will show you a man who is morbid, cynical, unresponsive to every call of nature. Such a man is worse than a pessimist, and more to be pitied. Take some of the greatest and most successful men in the world. Humor has often played an important part in their lives. Often a funny incident has marked the turning point of a great man's career; often some ridiculous condition has been the impetus of a new start in life."

Mr. Bangs is right. Did not Columbus' apparently hopeless task of standing an egg on end make thinkers of the wise men who sat around him? Was not George Washington credited with being a master of the truth because he once saw a boy punished for trying to jest with his father, and finally became, as Mr. Bangs facetiously remarks, so "he couldn't tell a lie even if he saw one?" And didn't Johann Gutenberg invent the printing press by working out a theory which found its origin while he was playing leapfrog with some other boys on damp ground? The impression made in the soil by the boys' feet is said to have given Gutenberg his first idea of the impression that could be make by types.—Robert Mackay in January Success.

Chicago Pies.

A man who recently visited a pie factory in Chicago thus describes it: The day we were there a special run was being made on pumpkin pies, and I looked in vain for any sign of pumpkin rinds. One of the foremen grinned and told me, in strict confidence, that real pumpkin was never used in pumpkin pies at present, except possibly in a few remote and very primitive New England villages. The substitute was a mixture of sweet potatoes, apples and cheap flour, flavored with a chemical extract. I tasted some of the stuff and was satisfied he was telling the truth. Cranberry pie contains only enough cranberries to "make a showing," after the manner of the oyster in the church fair stew. The rest is apple jelly, colored red and flavored. I have forgotten the other substitutes employed, but these will give you a general idea of the morality of the business. The average output of the factory was one a second, or about 36,000 pies for a working day. The manager told me they were shipped all over the pie belt in specially prepared crates.

Kitchen Weights and Measures.

A list the cook should keep close at hand or commit to memory:

Four teaspoonfuls of liquid make one tablespoonful.

Four tablespoonfuls of liquid, one gill or a quarter of a cup.

A tablespoonful of liquid, half an ounce.

A pint of liquid weighs a pound.

A quart of sifted flour, one pound.

Four kitchen cupfuls of flour, one pound.

Three kitchen cupfuls of cornmeal, one pound.

One cup of butter, half a pound.

A solid pint of chopped meat, one pound.

Ten eggs, one pound.

A dash of pepper, an eighth of a teaspoonful.

A pint of brown sugar, thirteen ounces.

Two cupfuls and a half of powdered sugar, one pound.—Ladies' Home Journal.

An explorer lately returned from his travels was relating his adventures.

"I peered," said he, "into the thicket and there before me lay a trunkless body."

"Nonsense," remarked an interfering critic, "who ever heard of a trunkless body?"

"My friend," replied the traveler, quietly, "the body was that of an elephant."

He then resumed his story.—London Globe.

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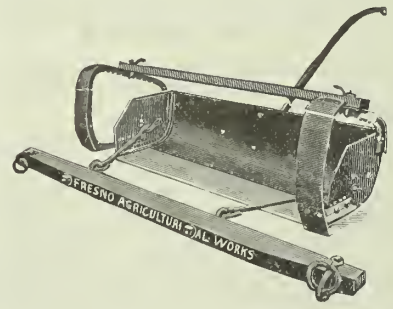

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 9, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	Feb.	May.
Wednesday	—@—	84 @82¼
Thursday	—@—	83 @81⅛
Friday	—@—	81½@83
Saturday	—@—	84 @83⅜
Monday	—@—	84½@83
Tuesday	—@—	82¾@83⅛

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	-s —d	-s —d
Thursday	6s 2¼d	6s 2⅝d
Friday	6s 2⅛d	6s 2⅜d
Saturday	6s 2⅝d	6s 3⅛d
Monday	6s 3 d	6s 3⅛d
Tuesday	6s 3¼d	6s 3⅝d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 04⅞@1 05	——@——
Friday	1 05⅛@1 06	——@——
Saturday	1 07⅛@1 06⅝	1 11 @1 10⅞
Monday	1 06¼@1 05½	1 10⅛@1 09½
Tuesday	1 05⅝@1 06	——@——
Wednesday	1 05¼@1 05⅜	——@——

*Holiday.

WHEAT.

The wheat market has ruled firmer than preceding week, but strength was more pronounced for futures on Call Board than for spot offerings. Little was done in actual wheat, either for shipment or on local account, but to have purchased freely, the payment of stiffer figures than lately current would have been necessary. Three wheat clearances have been made for Europe thus far this month, and the fleet now in port listed for wheat loading aggregates 28 ships. The visible supply of wheat in the United States east of the Rockies was given at 61,261,000 bushels, showing a decrease for week of 148,000 bushels.

The shipments of wheat and its equivalent in flour were as follows for six months ended January 1:

	1900.	1899.	1898.
Wheat, ctls.	3,183,528	2,381,748	989,201
Flour, ctls.	1,363,421	2,190,825	1,219,638
Totals	4,646,949	4,572,573	2,208,839

During the first six months of the current cereal year 61 cargoes of wheat and flour were shipped from San Francisco, aggregating 232,347 tons. Available stocks for export remaining in State on January 1 are estimated at 405,473 tons. Receipts from Oregon and other outside sources from July 1 to January 1 were 32,143 centals wheat 204,236 barrels flour—total in wheat and flour, 648,851 centals. Amount reported on hand July 1 was 7,111,574 centals. Deducting the old wheat carried over, also the imports from July to January, and allowing 7,000,000 centals for home consumption in twelve months, with the remaining surplus as estimated above, gives 12,000,000 centals for the California crop of 1900, or an exportable surplus from said crop of 5,000,000 centals.

	Centals.
On hand July 1	7,111,574
Surplus of crop 1900, estimated	5,000,000
Received from outside State, wheat	32,143
Received from outside State, flour	612,708
Total	12,756,425
Exports for six months	4,646,949
Balance	8,109,476

Or 404,473 short tons. There were ships here on the 1st sufficient to carry 90,000 tons, and the vessels on the way to this port represented a carrying capacity of 150,000 tons. This is about 60 ships less than required to move the surplus above shown.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.04⅜@1.07⅛.

December, 1901, delivery, $1.09½@1.11.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.05¼@1.05⅜; December, 1901, ——@——.

California Milling	$1 02½@1 07½
Cal. No. 1 shipping, alongside	98¾@1 00
Oregon Valley	97½@1 00
Washington Blue Stem	1 00 @1 05
Washington Club	97½@1 02½
Off qualities wheat	92½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s2½d@-s-d	6s5d@6s5½d
Freight rates	35@36¼s	38¾@40s
Local market	$0 95@98¾	$0 98¾@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

The market is without material change, values remaining quotably as previously noted, and nothing to warrant anticipating any pronounced fluctuation in prices in the near future. Movement to Asia and South America continues of good average proportions, most of this flour going forward on contracts. Spot supplies are not particularly heavy, but are ample to satisfy the immediate inquiry.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

The tendency of the market most of the week has been against the buying interest, especially for choice to select qualities, with no heavy offerings and no disposition to crowd stocks to sale at less than full current figures, some contending for higher rates than are quotable. Business was not active, however, and was mostly on local account, which is likely to be the case during the greater part of the balance of the season. Spot stocks are of very moderate volume, and prospects are that they will not be very materially augmented in the near future. Trading on Call Board was not brisk, but prices of options averaged higher than for the week preceding.

Feed, No. 1 to choice	75 @ 77½
Feed, fair to good	70 @ 72½
Brewing, No. 1 to choice	80 @ 85
Chevalier, No. 1 to choice	97½@1 02½
Chevalier, No. 2	85 @ 90
Chevalier, poor	70 @ 75

OATS.

Conditions of the market have not changed appreciably since last review. Firm figures are being exacted in most instances, and especially for desirable qualities of white, which are in very scanty stock. Colored oats constitute the bulk of present offerings, with a fair amount of business doing in this description, mostly at full current rates.

White Oats, fancy feed	1 40 @1 45
White, good to choice	1 32½@1 37½
White, poor to fair	1 20 @1 27½
Gray, common to choice	1 20 @1 32½
Milling	1 42½@1 45
Surprise, good to choice	1 40 @1 45
Black Russian	1 12½@1 25
Red	1 15 @1 32½

CORN.

There have been fair receipts of Eastern lately, but not much domestic product has arrived. The market presents a rather easy tone for large corn, both Yellow and White, more particularly for the latter. Small Yellow corn is in slim supply and is held at much the same comparatively stiff figures as have been current for some time past.

Large White, good to choice	1 15 @1 20
Large Yellow	1 15 @1 20
Small Yellow	1 50 @——
Eastern, in bulk (carload lots)	1 08 @1 10

RYE.

Scarcely enough doing in this cereal to keep values defined. Quotations remain without change.

Good to choice, new	87½@ 90

BUCKWHEAT.

There have been no recent arrivals. Offerings would likely meet with ready sale at prevailing rates.

Good to choice	1 85 @——

BEANS.

With few beans coming forward from any quarter, and spot stocks of quite moderate volume, mostly in few and strong hands, it is natural that the market should be unfavorable to buyers. The strength is most pronounced on white varieties and Limas, these being in lighter supply than colored beans. Values on the latter are being well maintained, however, with no special selling pressure. Pinks are being held more firmly than last quoted, and these are the cheapest bean now offering.

Pea, fair to good, 100 lbs	4 50 @4 75
Small White, good to choice	4 50 @4 65
Lady Washington	3 75 @4 00
Butter	4 00 @4 50
Pinks	2 20 @2 40
Bayos, good to choice	2 50 @2 75
Reds	3 00 @3 25
Red Kidney	4 00 @4 25
Limas, good to choice	5 50 @5 65
Black-eye Beans	2 75 @3 25
Horse Beans	1 75 @2 00
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

Green Peas, California	2 60 @2 75
Niles Peas	1 85 @2 00

WOOL.

Aside from the transfer of some scoured wool, through court, to settle up an estate, and having no connection with or bearing upon the immediate market, there has been nothing of consequence effected thus far the current month in this center. Eastern markets continue quiet. There are no changes in quotable values, which for the time being are based mainly on the views of holders, in the absence of sales. The belief is entertained that the near future will witness at least a moderate revival of business.

SPRING.

Humboldt and Mendocino	16 @17
Northern, free	14 @15
Northern, defective	12 @13
Middle Counties, free	14 @15
Middle Counties, defective	11 @13
Southern, 12 mos	8 @10
Southern, free, 7 mos	9 @11
Southern, defective, 7 mos	8 @ 9
Oregon Valley, fine	17 @18
Oregon Valley, coarse to medium	16 @17
Eastern Oregon, choice	13 @15
Eastern Oregon, fair to good	10 @12
Nevada, as to condition	11 @15

FALL.

Humboldt and Mendocino	11 @13
Middle County	9 @10
San Joaquin	7 @ 9
San Joaquin Lambs	8 @ 9

HOPS.

Inactivity continues to prevail, so far as wholesale trading is concerned, and jobbers are not doing any great amount of business. Offerings from first hands are light and are in the main of rather ordinary quality. Values for good to choice hops are ruling steady, but to effect free sales of lower grades, comparatively low figures would have to be accepted.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

Arrivals of hay were of much the same limited proportions as for several weeks preceding, and on this account values were tolerably well sustained at previously quoted range. The general tone of the market, however, cannot be termed firm. Wholesale and small buyers are taking hold very slowly, there being no likelihood of any shortage of supplies during the balance of the season, or of any special hardening of values.

Wheat	9 00@13 50
Wheat and Oat	9 00@12 50
Oat	7 00@12 00
Barley	6 00@ 9 50
Volunteer	5 00@ 8 00
Alfalfa	8 00@ 9 50
Stock	5 00@ 7 00
Compressed	9 00@13 00
Straw, ₱ bale	40 @ 47½

MILLSTUFFS.

Bran was in liberal receipt and market presented an easy tone, without being quotably lower. Middlings and Shorts were offered at unchanged rates. Market for Rolled Barley, as also for Milled Corn, was barely steady.

Bran, ₱ ton	13 50@14 00
Middlings	16 50@19 00
Shorts, Oregon	14 00@15 50
Barley, Rolled	16 50@17 00
Cornmeal	25 50@ ——
Cracked Corn	26 50@ ——

SEEDS.

Mustard Seed continues scarce and is not quotable. Flaxseed is arriving in moderate quantity from the North, going mainly to the oil works on contracts. Some Alfalfa seed is going outward, the last Australian steamer taking 140 sacks for Melbourne, valued at $1,525. In bird seed the little doing is at generally unchanged values.

	Per ctl.
Mustard, Trieste	—@——
Mustard, Yellow	—@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Owing to the good crop prospects, and the rather firm figures current for jute goods in Calcutta, the Grain Bag market is inclining in favor of holders, although quotable rates remain unchanged. In other bags and bagging there is nothing of consequence doing.

Calcutta Grain Bags, buyer June-July	6¼@ 6⅜
Calcutta Grain Bags, spot	6 @—
San Francisco Grain Bags, 22x36, spot	5¾@ 6
State Prison Bags in lots of 2000, ₱ 100	—@—
Wool Sacks, 4 lbs	—@32½
Wool Sacks, 3½ lbs	—@28½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

The Hide market is slow and weak. Pelts are quotably unchanged, but buyers do not take hold readily at full current figures. Tallow is in fair request at prevailing rates, both on local account and for shipment.

HONEY.

Stocks are light of both Comb and Extracted, restricting business as a rule to small jobbing operations. Prices remain on same plane as previously quoted, and for high grade honey the market is firm at the figures current.

Extracted, White Liquid	7½@ 8
Extracted, Light Amber	6¾@ 7¼
Extracted, Amber	5½@ 6½
White Comb, 1 lb frames	13 @14
Amber Comb	11½@12½
Dark Comb	8 @ 9

BEESWAX.

Very little arriving and spot supplies are of exceedingly light proportions. Buyers are readily found at prevailing figures.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Market for Beef is again higher, and there is no prospect of materially easier rates prevailing for some months to come. Prices current on Mutton were also advanced. Lamb brought good prices. Veal was fairly steady. Hogs brought slightly firmer figures than preceding week.

Beef, first quality, dressed, net ₱ lb	8 @ 8¼
Beef, second quality	7½@ 8
Beef, third quality	6½@ 7
Mutton—ewes, 9@9½c; wethers	9½@10
Hogs, hard grain fed, medium	5¾@ 5⅞
Hogs, small, fat	5¾@ 5⅞
Hogs, large, hard	5⅜@ 5½
Hogs, feeders	5 @ 5¼
Hogs, country dressed	7½@ 8
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	8½@—
Lamb ₱ lb	10 @11

POULTRY.

There was a generally better market for poultry than for many weeks preceding, and especially did choice young stock command good prices. Receipts of Eastern showed material decrease, and arrivals of domestic were of quite moderate proportions. Indications are that the market will not develop any pronounced weakness for choice young stock during the current month.

Turkeys, live hens, ₱ lb	13 @ 14
Turkeys, live gobblers, ₱ lb	12 @ 13
Turkeys, Dressed, per lb	15 @ 18
Hens, California, ₱ dozen	4 00 @5 50
Roosters, old	4 50 @5 00
Roosters, young (full-grown)	5 50 @6 50
Fryers	5 00 @5 50
Broilers, large	5 00 @5 50
Broilers, small	4 00 @4 50
Ducks, old, ₱ dozen	4 00 @5 00
Ducks, young, ₱ dozen	5 00 @6 50
Geese, ₱ pair	1 75 @2 00
Goslings, ₱ pair	1 75 @2 00
Pigeons, old, ₱ dozen	1 00 @——
Pigeons, young	2 25 @2 50

BUTTER.

Lower values have been established since last review for both creamery and dairy product, but weakness was most marked for the common and defective grades, such being in heaviest supply, as is generally the case at this time of the year. Packed butter is offering at easy rates and is moving very slowly.

Creamery, extras, ₱ lb	24 @—
Creamery, firsts	22 @—
Creamery, seconds	20 @—
Dairy, select	20 @21
Dairy, firsts	19 @20
Dairy, seconds	16 @18
Dairy, soft and weedy	— @—
Mixed store	14 @15
Creamery in tubs	19 @21
Pickled Roll	19 @21
Firkin, California, choice to select	20 @21
Firkin, common to fair	17 @18

CHEESE.

While there is a little easier tone, prices realized in a jobbing way are about the same as for some weeks past. Buyers are not taking hold freely, however, at current rates, believing that prices have touched zenith. That there will be any special accumulations, however, for a month or two is wholly improbable.

California, fancy flat, new	12½@13
California, good to choice	12 @12½
California, fair to good	11 @12
California Cheddar	— @—
California, "Young Americas"	12 @14

EGGS.

There were no heavy arrivals of fresh domestic and Eastern have stopped coming forward. There are still moderate quantities of Eastern, however, offering out of cold storage. While the market lacked firmness, quotable rates for fresh eggs continued close to figures last noted. Weakness was most pronounced on highest priced stock, as all eggs now arriving are showing good condition.

California, select, large, white and fresh	29 @30
California, select, irregular color & size	26 @28

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California, good to choice store	24	@	26
Eastern, as to section and grading	—	@	—
Eastern, cold storage	22	@	24

VEGETABLES.

Onion market shows decided firmness for thoroughly sound, hard and uncut stock, with receipts and offerings light. Prices for other winter vegetables were without special change. Fresh spring vegetables were in only moderate receipt, and desirable qualities sold as a rule to good advantage.

Beans, String, ℔ lb	7	@	10
Beans, Wax, ℔ lb	10	@	10½
Beans, Lima, ℔ lb	—	@	—
Cabbage, choice garden, ℔ 100 lbs	1 00	@	1 25
Cauliflower, ℔ dozen	50	@	—
Egg Plant, ℔ lb	8	@	10
Garlic, ℔ lb	3½	@	5
Mushrooms, Wild, ℔ lb	8	@	12
Mushrooms, Buttons, ℔ lb	15	@	20
Onions, Yellow Danver, ℔ cental	1 70	@	2 00
Peas, Sweet, garden, ℔ lb	5	@	8
Peppers, Green Chile, ℔ lb	4	@	8
Squash and Pumpkin, ℔ ton	15 00	@	15 00
Tomatoes, ℔ crate	1 00	@	1 50

POTATOES.

Market is well supplied with good to fairly choice potatoes, the bulk of offerings being from Sacramento river district, where the quality the past season has been considerably above the average. Extra select Burbanks, about perfect as to quality, size, shape, etc., are not plentiful, and are sought after by the most particular local trade, bringing in a limited way comparatively stiff figures. Sweets were in more than ample supply for the immediate demand.

Burbanks, River, ℔ cental	30	@	60
Burbanks, Petaluma-Tomales	35	@	60
Burbanks, Salinas, ℔ cental	85	@	1 15
Burbanks, Oregon, lb cental	55	@	90
Sweet Potatoes, Yellow, ℔ cental	40	@	75

The Fruit Market.

FRESH FRUITS.

In the line of fresh fruits, other than citrus, Apples are the only noteworthy representative at present on markot. Quotable values for Apples continue at fully as wide a range as oarlier in the season, with firmness confined wholly to best qualities. The most active inquiry is for medium grades at moderate figures, or within rango of say 50c@$1 per regular size box for good cooking to choice eating applos. Fancy Virginia Greenings would probably command an advance on highest figure below quoted. Pears and Persimmons are still seen in a small way, but are practically out and are not quotable.

Apples, fancy, 4-tier hox	1 25	@	1 50
Apples, good to choice, ℔ 50-lb box.	65	@	1 00
Apples, common to fair, ℔ 50-lb hox.	25	@	50

DRIED FRUITS.

The same inactive and featureless condition prevails in the market for cured and evaporated fruits as noted in last review. Beyond the filling of orders by jobbers, the orders being mostly of small compass, there is virtually nothing doing. There are considerable quantities here in store and offering from first hands which are receiving no attention. Jobbers appear to have sufficient stocks for all immediate requirements, and show no disposition to make further purchasos until actually compelled to replenish. With a fairly active demand during the spring and early summer months, which is not improbable, there may be a much more speedy and satisfactory clean-up than is at present foreshadowed. Differences among the members of the Cured Fruit Association as to what course to pursue in regard to Prunes have not helped matters any, as could be readily inferred. Efforts are now being put forth on new lines to develop increased trade for Prunes, and the belief is entertained by some outside, as well as those in the Association, that substantial and satisfactory results will likely follow.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6½	@	7
Apricots, Royal, choice, in sacks, ℔ lb	7½	@	8
Apricots, Royal, fancy	9	@	—
Apricots, Moorpark	9½	@	11½
Apples, in 50-lb hoxes, rings, pressed, fanoy	5¼	@	5½
Apples, 50-lb hoxes, rings, pressed, good to choice	3½	@	4½
Figs, White, fancy pressed	6	@	7
Nectarines, ℔ lb	4	@	6
Peaches, unpeeled, fancy	6	@	6½
Peaches, unpeeled, choice	4½	@	5
Peaches, peeled, in boxes	11	@	14
Pears, unpeeled Bartletts, halved, fancy.	5	@	6
Pears, halved, unpeeled Bartletts	3½	@	4½
Pears, quartered, unpeeled Bartletts	3½	@	4½
Plums, Black, pitted	4	@	5
Plums, White and Red	5	@	6
Prunes, Silver	4½	@	6

COMMON SUN-DRIED.

Apples, sliced	2	@	3
Apples, quartered	2	@	3
Figs, Black	1½	@	2½
Figs, White	2½	@	3½
Peaches, unpeeled	3	@	5

Prices for 1900 crop Prunes, as named hy the California Cured Fruit Association: Santa Clara, four sizes, 3c. per lh.; 40-50s, 7c.; 50-60s, 5¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼o.; 100-120s, 2c., which is the uniform price for this grade; Sonomas, other than smallest, ⅛o. less; other districts, ¼c. less, except for smallest; Ruby, ¼c. premium.

RAISINS.

There is little movement at present, either outward or on local account. With a view of increasing the export trade, the Association has made a reduction of 1½c per pound from regular rates on all Pacific coast export orders for loose Muscatel Raisins, the reduction going into effect on last Saturday, the 5th inst.

CITRUS FRUITS.

Orange market has not shown much life the current week, partly due to rather unfavorable weather conditions most of the time. Stocks were sufficient to accommodate a considerably greater demand than existed. The quotable range of prices was without radical change, but the market was not firm, especially for other than most select. Auction sales ranged down to 75c per box for common stock and up to $2.25 for fancy. Lemon market ruled fairly steady, but business was far from brisk. Offerings were of fair volume. Limes remained quotably as last noted, with the bulk of supplies in few hands.

Oranges—Navel, ℔ hox	1 00	@	2 25
Valencia, ℔ box	—	@	—
Seedlings, ℔ hox	75	@	1 25
Tangerines, ℔ box	75	@	1 25
Grape Fruit, ℔ box	1 25	@	2 25
Lemons—California, select, ℔ hox	2 25	@	—
California, good to choice	1 50	@	2 00
California, common to fair	75	@	1 25
Limes—Mexican, ℔ box	4 50	@	5 00
California, small box	50	@	1 00

NUTS.

An exceedingly quiet market is being experienced for both Almonds and Walnuts. Stocks of good to choice are not heavy of either kind, and are being in the main rather steadily held. Under selling pressure, however, less than the figures nominally current would have to be accepted.

California Almonds, shelled	22	@	25
California Almonds, paper shell, ℔ lb	12	@	13
California Almonds, soft shell	9	@	11
California Almonds, hard shell	6	@	7
Walnuts, White, soft shell	8½	@	10½
Walnuts, White, California, standard	7½	@	10
Chestnuts, California Italian	—	@	—
Peanuts, California, fair to prime	4½	@	5½
Peanuts, Eastern, hand-picked	5½	@	6
Pine Nuts	5	@	6

WINE

No changes have taken place in the general condition of the local wine market or in quotable rates since the date of our last review. While there is not much doing in the way of transfers of new wines from growers, this is more owing to lack of offerings than to absence of inquiry. The market for dry wines of 1900 vintage may be said to be quotable at 16@19c. for good to select. There is probably poor wine that would not command the lower figure, and there is some of very high grade which it would be difficult to secure at top quotation. The ship Aryan, sailing Monday for New York, took as part cargo 163,383 gallons wine.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	90,328	3,447,811	2,985,555
Wheat, centals	293,303	3,499,531	2,437,191
Barley, centals	50,612	2,479,622	3,811,456
Oats, centals	9,615	454,831	561,793
Corn, centals	5,500	73,775	82,899
Rye, centals	1,790	96,827	83,890
Beans, sacks	3,559	466,200	286,183
Potatoes, sacks	42,516	912,999	695,140
Onions, sacks	2,083	128,533	118,604
Hay, tons	2,093	99,104	95,962
Wool, bales	87	22,159	35,297
Hops, hales	165	6,205	7,451

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	68,952	1,951,344	1,793,571
Wheat, centals	265,948	3,244,233	2,0-5,009
Barley, centals	100	1,466,555	2,986,656
Oats, centals	...	46,784	24,771
Corn, centals	2	2 063	9,926
Beans, sacks	22	8,427	16,997
Hay, bales	345	81 296	60,876
Wool, pounds	...	233,621	3,484,178
Hops, pounds	9,316	421,501	661,048
Honey, cases	...	1,632	3,228
Potatoes, packages	294	56,412	45,380

California Dried Fruit at New York.

NEW YORK, Jan. 9.—Evaporated apples, common, 3¾@4¾c; prime wire tray, 4¾@5¼c; choice, 5½@6c; fancy, 6@7c.

California Dried Fruits.—Movement is slow, hut prices are without special change.

Prunes, 3½@8½c.

Apricots, Royal, 10@14c; Moorpark, 15@17c.

Peaches, unpeeled, 7@10c; peeled, 15@18c.

THE UNITED STATES AHEAD AS USUAL.

At the Maine State Dairymen's Association Convention held at Augusta, Dec. 4 and 5, 1900, there were 59 entries of butter, in which

Fifteen were users of the IMPROVED UNITED STATES SEPARATOR with an average score of 95.6 and Twelve were by users of the ALPHA-DE LAVAL SEPARATOR with an average score of 91 6

Users of the United States.

L. W. Dyer, Cumberland Center	98
N. J Libby, South Warren	98
G. G. Grinnell, East Exeter	97.75
Waterford Cry., South Waterford	97.5
C. S. Pope, Mancbester	97
C. F. Johnson, Dexter (prints)	97
Warren Creamery, South Warren	96.5
Mrs. Lizzie Tibbetts, East Exeter	96
Pride Bros., East Waterford	95.75
C. E. Tibbetts, East Exeter	95
E. E. Chase, South Bethel	95
R. W. Prescott. Augusta	94.5
C. F. Johnson, Dexter (tuh)	93
H. I. Simpson	92
S. S. J. Porter, Cumberland Center	91
	1434.0
Average of 15 entries	95.6

Users of the Alpha-De Laval.

F. W. Blanchard & Son, Cumberland Center	96.5
Jaynes Cry. Co , Waterville	95
J. Henry Moore, Winthrop	94 5
A. A. Sweetser, Cumberland Center	94.5
Cushnoc Creamery, Augusta	93
J. W. Luce, West Troy	93
M. Olive Moore, Winthrop	91
J. L. Stewart, Skowhegan	91
Lyman Leighton, Exeter Mills	90
D. S. Glidden, Cooper's Mills	89
F. J. Libby, Richmond	87
F. S. Hogan. Thorndike	85
	1099.5
Average of 12 entries	91.6

These records show the Improved United States users averaged **four points ahead** of our "would be competitor," the Alpha-De Laval.

They also show that **six,** or nearly one-half, of the **United States entries scored higher** than the **highest De Laval.**

The Improved United States Separator also stood FIRST in each and all of the different classes and special premium offers at the Convention, to wit:

REGULAR ENTRIES.

Dairy Butter.
First—L. W. Dyer, Cumberland Center 98
Creamery Butter.
First—H. J. Libby. South Warren 98
Fancy Butter Display.
First—Lydia M. Dyer, Cumberland Center.

SPECIAL PREMIUM ENTRIES.

WORCESTER SALT COMPANY.
Creamery Butter.
First—Waterford Creamery, So. Waterford 97½
Dairy Butter.
First—L. W. Dyer, Cumberland Center 98

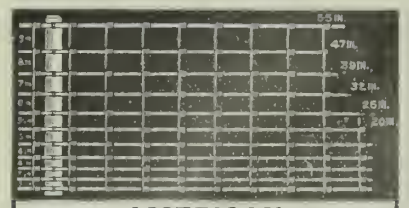
WELLS & RICHARDSON COMPANY.
Creamery Butter.
First—Waterford Cry., South Waterford 97½
Dairy Butter.
First—G. G. Grinnell, E. Exeter 97¾

At the **New York State Dairymen's Association Convention** held at Watertown, Dec. 11 to 13, 1900, there were 65 entries and **the butter scoring the highest** (98½ points) at the Convention was made by B. C. Rockwell, Spring Water Creamery, West Bangor, N. Y., and was the product of the

IMPROVED UNITED STATES SEPARATOR.

Intending purchasers should remember that if they wish the Best, they must of necessity buy the IMPROVED UNITED STATES CREAM SEPARATOR.

VERMONT FARM MACHINE COMPANY, Bellows Falls, Vermont.



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San Joaquin Valley Notes.

To the Editor:—The University substation for agricultural experiments located at Tulare is worthy of more attention from the farmers of the San Joaquin valley than it receives. Many problems are here being worked out that are likely to be of value, not only to this valley and this State, but also to other sections of the United States. Mr. Julius Forrer, who is in charge, is a man of wide experience and observation along the lines on which he here has to work. Any person who will spend a little time with him at the station viewing the object lessons and problems there being worked out, can not fail to get new light on many subjects of which he previously was in darkness.

The Salt Bushes.—Some of the most interesting experiments are those with the Australian salt bushes, which grow and do well on soils so full of alkali that scarcely anything else will grow. The Atriplex semibaccata seems the most valuable variety and resists drouth the best. Stock used to alfalfa do not take kindly to this forage plant at first; but, after they get used to it, will thrive on it and get fat. The sheep of Australia are fed largely on this plant, and we all know what great quantities of mutton are exported from that country to Europe. Turkeys and chickens relish the little leaves of this plant very much. Many varieties of grasses and clovers have been experimented with, but with minor success.

Sheep.—They have a small flock of Persian, or fat-tailed sheep. These should prove well adapted to the environments of this section. Some lambs, seven months old, from Persian ram and grade Merino ewes, were almost as large as ordinary sheep. The cross from Merino-Shropshire ewes seemed to attain the larger size and to be the most valuable for mutton; while the cross from Merino-Southdown ewes produced the finer and more valuable wool.

Fruits.—Of fruits there are many varieties grown and with varied success. Grapes are generally doing well, some 200 varieties being grown. They have some forty-five varieties of figs; of these the Hirtu du Japan promises to be the most valuable and is the most prolific. The fruit of this variety is of a purplish-white color, while the inside is pure white, with a cream-colored center. Of apples, some thirty varieties are experimented with, and some are likely to prove valuable and profitable. Apricots and almonds have been a failure mostly, while pears and some varieties of peaches have done well. About thirty varieties of olives are grown, and they seem to stand the alkaline soil very well. They were a fine lot of trees and loaded with just about all the fruit the trees could carry. Ten different varieties of date palms are growing, and of these the Seewah seems to be doing by far the best. They have also a beautiful specimen of the camphor tree.

A very beautiful little shrub, Arbutus uredo, or Strawberry tree, as it is popularly called, adorns the ground. This plant, although not likely to become commercially valuable, deserves, nevertheless, a place for ornamental purposes on every farm where it can be grown. It is an evergreen, with dark-green, glossy leaves, thickly set, and beautiful, crimson-colored, strawberry-like fruit, yellow, unripe fruit and a sprinkling of fine white flowers, from which next year's fruit is formed. It continues like this through the late fall and early winter months.

Considering that their soils are mostly alkali lands, great success has been attained there so far, and much information can be confidently expected from there in the future.

Kingsburg Rochdale Co. — At Kingsburg, Fresno county, there are ninety farmers who, in their enterprising and co-operative spirit, have started a mercantile company called the Kingsburg Rochdale Co. The firm was organized and incorporated in August last year, the officers being A. Hallner president, S. G. Johnson treasurer and manager and A. T. Lindgren secretary. Each one of the ninety members paid cash, or gave his note for $100 for a membership certificate; a stock of goods valued at about $7500 is now carried. Sales have been good and trade continually increasing. The need of larger and better quarters was felt, and, accordingly, a commodious new building is in course of erection. Everybody seems pleased with the undertaking so far, and, as only a strictly cash business is done, there is no reason why it should not be a success. The company is organized under the Co-operative law of 1895, and on the Rochdale plan, each member receiving at the end of the year his pro rata share in the profits in proportion to his purchases.

Insurance.—This community has also for some time past had in successful operation a mutual or co-operative fire insurance company, that has saved them hundreds of dollars, and not that only, but opened up to them the possibilities of co-operation, which is here a success and has a bright future that the whole community takes an interest in and is pleased with.

Swine.—The herd of Poland-China swine that carried sweepstakes premium at the State Fair in 1900, is owned by S. P. Lindgren & Sons, Kingsburg. They are truly fine specimens of their kind, and well they may be, for a member of the firm goes East as often as necessary and selects personally of the best that can be had, regardless of price. K. B. N.

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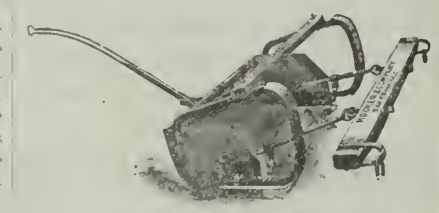

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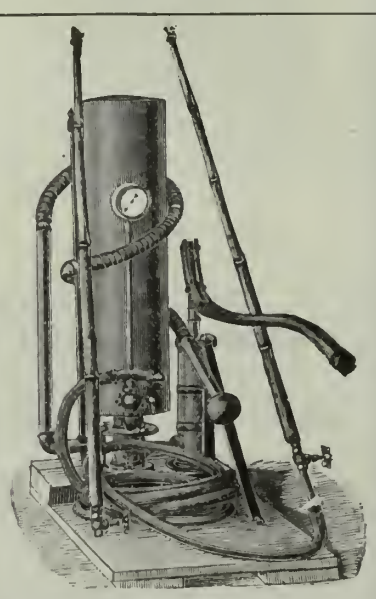

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Tulare Grange Meeting.

To the Editor:—Notwithstanding rain and unfavorable weather, there was a good attendance of members at its meeting on Saturday, the 5th. The day being wet some of the members were late getting in, so the first business transacted was participating in a very excellent lunch served by the sisters and enjoyed by all present.

After opening exercises the newly elected officers for the ensuing year were duly installed by Bro. D. M. Winans, Deputy Worty Master of the State Grange: Frank Styles, Worthy Master; Morphew Jacob, Overseer; John Tuohy, Lecturer; E. C. Shoemaker, Steward; J. A. Eckels, Assistant Steward; Julius Forrer, Treasurer; Bertha I. Morris, Secretary; A. J. Woods, Gate Keeper; Kate Mull, Pomona; Sister Weaver, Flora; Sister Adle Slaughter, Lady Assistant Stew.

After installation Bro. Winans gave the unwritten work and spoke of his own work in reorganizing old Granges and organizing new Granges in California.

The newly installed Master spoke on the advantages of association and the opportunity of association of farmers the Order of Patrons of Husbandry affords, which was followed by a long and interesting consideration of the subject, Bro. Winans telling of the advantages of association in Sonoma county Granges in purchases amounting to very much more than the Grange dues, besides the great benefit it is to the Order. It was conceded that all farmers, in justice to themselves and their calling, should be members of the Order. There should be three times the number of Grangers and three times the number of Granges there are in California. In this connection it was conceded that fuller and more frequent reports of subordinate Granges in our agricultural papers would benefit the Order.

Bro. Winans expressed a desire to canvass Tulare and Kings counties with a view of organizing more Granges therein.

The Worthy Master appointed a committee on relief, one on finances, one on consideration of Grange dues.

Bro. E. C. Shoemaker read a well-written address, which met with applause.

On motion Bros. T. Jacob and Frank Styles were elected delegates to represent Tulare Grange at the State Fruit Growers' Convention to convene in Grangers' Hall, Sacramento, on the 15th of this month. All their efforts are to be given to promoting a fruit growers' association which will include all commercial fruits and all of California.

Owing to the installation services and time taken in considering the many interesting subjects before the Grange, the subject of the day was laid over, but will be considered at the next meeting, viz., "The Influence of the Grange in Promoting Purity and Happiness in Farmers' Homes, and the Effect of Such Home Life in the Formation of Character."

The Grange separated with a general expression of satisfaction in being present at the meeting, that the Grange is essential to us, and that Tulare Grange will do its part. J. T.

Grange Reorganized.

To the Editor:—Merced Grange No. 7 was reorganized by D. M. Winans of Petaluma, Sonoma county, with forty-one members. The officers elect are as follows: Master, W. B. Johnson; Overseer, E. H. Kahl; Lecturer, J. A. Clark; Steward, E. D. Capwell; Assistant Steward, A. W. Morley; Chaplain, Mrs. A. L. Kahl; Treasurer, G. Dean; Secretary, Miss Jessie Peck; Gate Keeper, W. T. Rutherford; Pomona, Mrs. A. W. Morley; Flora, Miss M. Perry; Ceres, Mrs. E. Kahl; Lady Assistant Steward, Mrs. W. T. Rutherford. Correspondent.

Coughs & Colds Cured with R. Hall's Pulmonary Balsam.

Secretaryship of State Board of Agriculture.

The Executive Committee of the State Grange has adopted a set of resolutions framed by W. L. S. Taylor calling upon the Governor to appoint to the vacancy caused by the resignation of Judge P. J. Shields, "a practical stockman, and also a broad man in affairs affecting the States' agricultural interests, a man who will be in close touch with the farming interests, and who will use the society's resources toward their development, and not one who will use the position for political purposes alone." The sentiment is good, but the Governor does not appoint the secretary of the State Board of Agriculture. The board elects its own secretary, and, we hope, will heed the suggestion of the Grange.

San Jose Grange.

Last Saturday's session of San Jose Grange was devoted to the installation of the officers-elect. There was a large attendance. An interesting feature of the session was the presentation to Daniel Coates, the retiring Worthy Master, of a beautiful cane. The presentation speech was made by Miss Adah Ross. Mr. Coates replied in fitting terms, expressing his appreciation. We published the list of officers at the time of their election last month.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING DEC. 25, 1900.

664,452.—Saw Clamp—J. A. Almquist, S. F.
664,372.—Furnace—P. H. Bagley, Alameda, Cal.
664,718.—Violin Support — C. W. Browster, El Monte, Cal.
664,460.—Turntable—E. Burr, Reno, Nev.
664,538.—Aging Wines—A. B. C. Dowdoll, St. Helena, Cal.
664,539.—Folding Bed — D. Eisner, S. F.
664,735.—Match Box — Lizzie C. Fay, Pasadena, Cal.
664,397.—Shovel—F. W. French, Bostonia, Cal.
664,740. — Railway Bed—J. W. Gray, Sodaville, Cal.
664,634.—Wrench — Grantstrom & McDonald, McMinnville, Or.
664,638.—Spring Seat — S. C. Hitchcock, Tacoma, Wash.
664,549.—Butter Box—J. K. C. Hobbs, S. F.
664,489.—Stove—J. McCartney, S. F.
664,490.—Bicycle Surport—A. McCollum, San Jose, Cal.
664,665.—Printing Frame — S. McLaughlin, Los Angeles, Cal.
664,499.—Frog—C. E. Perry, S. F.
664,502.—Tripod—P. H. Reardon, S. F.
664,434.—Cornet—F. Y. Richmand, S. F.
664,686.—Harrow — M. Smith, Asotin, Wash.
664,794.—Preventing Cows From Kicking—J. F. Wallace, Ashland, Or.

Grow Asparagus to Can.—Sonoma County Farmer, Jan. 5: Walter Armstrong has five acres planted to the Mammoth White asparagus on his Green Valley Creek ranch. He only cut about 1000 pounds last year, but this season he estimates that the crop will be worth at least $1000 if delivered to the cannery. The plant has to have the best of soil and lots of care. The work of hilling up to bleach the "grass" began last Saturday. After plowing to the hill, the work of covering has to be done with a fine rake, care being taken to keep clods or any heavy object from the plants, so as to give the tender shoots chance to push their way up through the soil. Mr. Armstrong will add five acres more this fall, and another fall increase it to fifteen acres, which, it is estimated, will be enough to supply a cannery. A party stands ready to put in a special plant and building when the fifteen acres comes into bearing.

The Easiest Way
to make money is to have eggs to sell in the winter season, when they bring a good price. Our book, "How to Make Poultry Pay," tells you how to do it. *It is free.* Write us for a copy.
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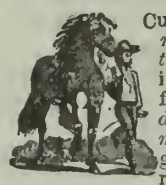
Cures all species of *lameness, curbs, splints, contracted cord, thrush, etc.* in horses. Equally good for internal use in *colic, distemper, founder, pneumonia, etc.* Satisfaction guaranteed or money refunded. *Used and endorsed by Adams Express Company.*
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Beware of so-called Elixirs—none genuine but Tuttle's. Avoid all blisters; they offer only temporary relief if any.

Mt. Campbell Orange Tract,
22 Miles East of Fresno, near Reedley.
SOIL—Red dry bog; the very best.
WATER—Large Alta canal and reservoir.
LOCATION—High sloping mesa above frost line.
Now offered for sale with water at $75 to $100 per acre in 10 or 20 acre tracts.
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Garden City Nursery
HAS A COMPLETE LINE OF
NURSERY STOCK
AND A SURPLUS OF
Myrobolan and Peach Root Prunes, Bartlett Pears; Lambert, Bing and Yellow Spanish Cherries; Amsden June Peaches; Grape Vines.
WRITE FOR PRICES ON STOCK WANTED.
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Piston is easily and quickly repacked and all valves easily accessible. Piston, piston-rod, valves, valve seats and cylinder lining are brass. Piston-rod is outside guided, so that it runs perfectly straight.
We carry a full line of SPRAY GOODS.
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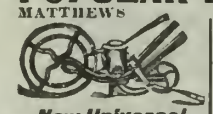
New Universal Model Garden Drill Single Wheel plants straight rows at uniform and perfectly regulated depth. Fine regulation of exact quantity of seed.
NEW UNIVERSAL
Double Wheel Hoe, Cultivator, Rake, and Plow. Adjustable Arch

Single Wheel Hoe Cultivator, Plow and Rake, for between row cultivation. Runs easily.

High Arch Expansion Hoe is double and single wheel combined. Adjustable to any depth.
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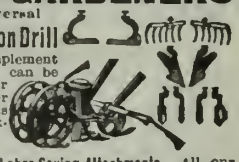
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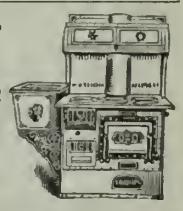

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FARMERS' CLUBS.

San Jose Farmers' Club.

The third annual meeting of the Santa Clara County Farmers' Club was held last week.

President Cragin in his annual message said that the club had done much in the two years of its existence but that much more remained to be done to make it what it should be. The club now has pleasant rooms with a good library and many daily, weekly and monthly publications on the tables. It was the initiation of the club which led to the organization of the California Cured Fruit Association and while the result remains to be seen he was satisfied that it was on the right lines and the principle was certain to succeed in the end. The Framers' Insurance Co., of this county, was another outcome of the Farmers' Club and and its success now seems certain.

Our meetings have been harmonious and pleasant and I am sure they have served to increase our acquaintance with one another to our mutual advantage. We had one death during the year, that of H. A. Brainard. He was an earnest, faithful worker and his death we deeply grieve. We should have 500 members and the new officers can have much to do with securing them. We should have a case here to show all kinds of insects and I understand that Horticultural Commissioner Ehrhorn stands ready to supply the specimens. Prof. Emerson is ready to supply us stuffed birds of all kinds found in this valley. The cost will be small and we should have both exhibits. It will help to make this club the center for the agricultural and horticultural interests of the valley.

Vice-President Lewis spoke of the good work of the club and thought the field was without limit for future good. For his own part the information he had received in the club had been of great practical benefit in showing him how to plant and cultivate a young orchard.

The report of the secretary and treasurer showed cash on hand of $39, with debts outstanding of $76. The membership is slightly above one hundred. To meet this there are dues collectable amounting to $240.

The by-laws were amended so as to decrease the number of the general committee from thirty-three to twenty-three.

Officers Elected.—The election of officers resulted as followed: J. R. Lewis, president; Volney Rattan, vice-president; Joseph Taylor, secretary; H. J. Ball, treasurer. Mr. Cragin positively declined to accept the presidency again, having served two years. F. H. Babb, A. B. Fletcher and J. S. Selby were elected trustees. The general committee consists of twenty-three members, the three ranking officers being ex-officio members. Those elected were F. Dunn, F. M. Righter, E. M. Ehrhorn, C. F. Freitag, W. P. Cragin, A. B. Fletcher, W. P. Lyon, R. M. Mantz, J. R. John, C. W. Childs, B. G. Hurlbert, J. H. Townsend, W. G. Cotter and J. W. Raines. The president was directed to name the remaining six members at the next meeting. The committee organizes and divides itself into all the regular committees of the club.

"Yes," said Miss Cayenne, "he is undoubtedly a cynic." "What is your idea of a cynic?" "He is a person who keeps you continually in doubt whether he is unusually clever or unusually disagreeable."

$100 Reward, $100.

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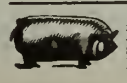

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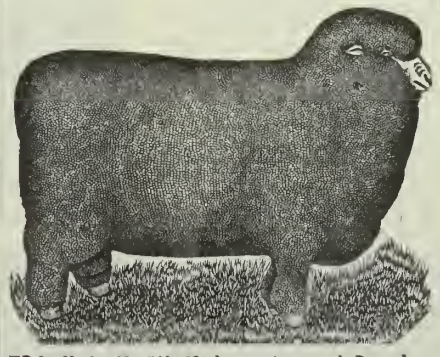

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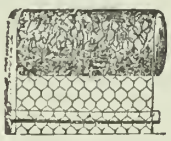

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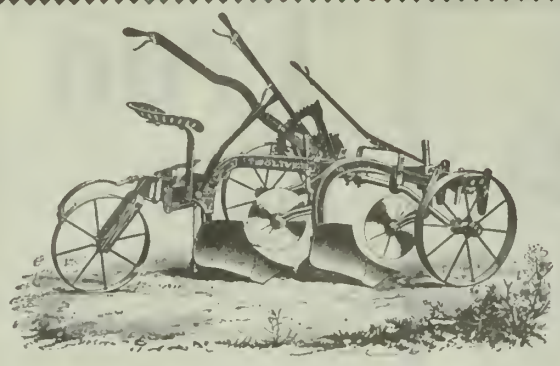

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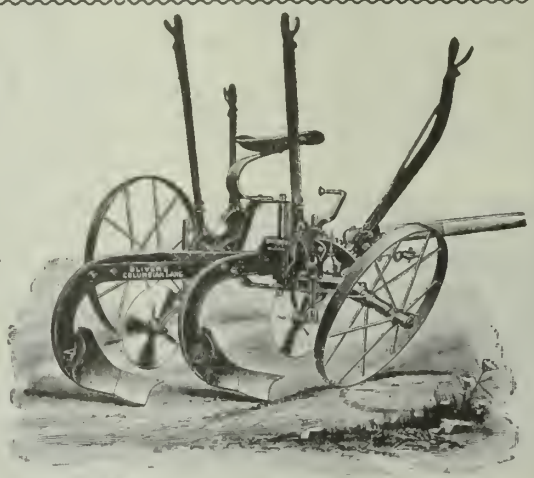

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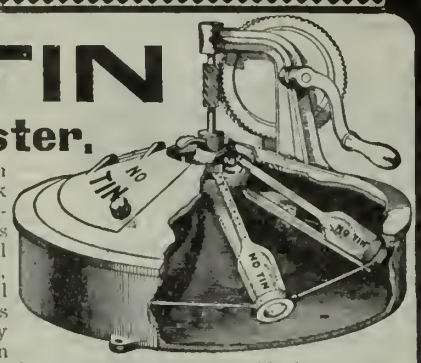

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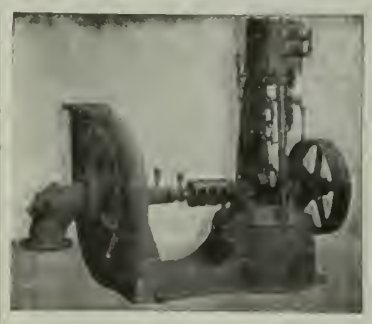

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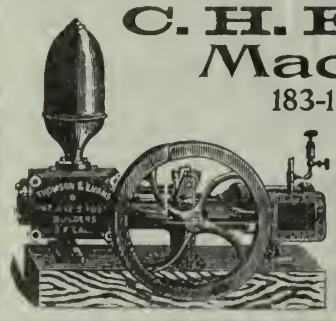

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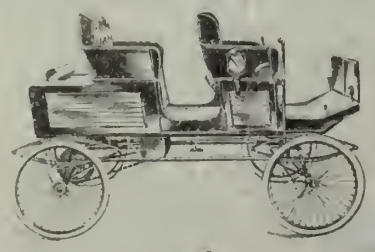

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 3. SAN FRANCISCO, SATURDAY, JANUARY 19, 1901. THIRTIETH YEAR. Office, 330 Market St.

Angora Goats in California.

The Angora goat is enjoying its full share of the activity which now characterizes the whole line of industrial animals. In fact, mohair was perhaps the first of the animal products to awaken from the lethargy and distrust of the early part of the last decade, and thus led in the revival of all which has been of such great moment to this country. California was well circumstanced to profit by the advance in mohair, for there were quite a number of breeders who had stood by their colors all through the dark, dull times and had wrested success from conditions which others accepted as leading only to failure. The result was that California had mohair when others were shy of it, and had fine breeding goats when other goat countries in distant parts of the world wanted them.

Pasha, Imported from South Africa in 1893.

The most prominent of those who had faith in the business and nerve enough to go right along with it was Col. C. P. Bailey of San Jose, whose work in the Angora interest is well known to our readers. Now that there is such wide favor for the goat, and so many are thinking of his value, it seems to us timely to make the display which we offer our readers on this page.

As fitting the beginning of the new century, Col. Bailey and his sons, who have grown up into participation in his enterprise, have issued a very handsome brochure full of facts about the animals and of practical suggestions in their handling. It is shown by a historical sketch that the first Angora goats were brought to the United States from Turkey in 1848 and that another importation was not made until 1866. In that year seven head were sent to California, of which Col. Bailey secured two at $500 per head. Three years later Col. Bailey participated in another effort to bring a new importation to California. Other importations followed at intervals, from all of which good animals were secured, and in 1893 and 1899 new blood was secured by importation from South Africa. During this long course of breeding and importation, constant selection has been practiced toward the highest type attainable, and the demand which the California-bred goats now receive from other goat regions of the world is complete demonstration that satisfactory results have been attained. In the pamphlet which gives the historical facts in greater detail, there are also many pertinent suggestions concerning the best methods of breeding and care. These suggestions are drawn from long experience on the Bailey ranches in California and Nevada, and are of most direct value to those entering the business.

A Typical Group.

Princess of Monterey at Ten Months Old.

It is interesting to note the several values of the Angora goat. The mohair is the highest class animal fiber; it is second only to silk in fineness and luster, and is a great deal more lasting than any article made of silk. It is in such demand in this country that the consumption by American manufacturers last year was three times as much as the local product, the balance being imported from South Africa and Turkey. This fact has much to do with the present increase in the Angora interest. The goat's skin is the basis for a great industry in itself, both in the line of leather and fleece skin. It is said that the United States imported twenty-five million dollars' worth of raw goatskin during the last year. Angora mutton is in good repute, often being sold in the markets as mutton. It is, however, more like venison. In fat mutton, the fat is nearly all on the outside, especially with the mutton breeds, while the fat of the Angora is more evenly distributed through the meat. The goats can be profitably killed at four years old and over after they have yielded much hair and grown a full-sized skin. The Angora goat as a clearer of brush land is also of much moment, and thousands of acres in the West are now being reclaimed for tillage through the agency of goats as clearers.

The animals shown on this page are good representatives of their kind. Some of them took prizes at the Columbian Exposition and others have swept the board at California fairs for several years past. They are but single specimens out of hundreds in the Bailey flocks.

Three Little Maids.

Prize Winners at the Columbian Exposition.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, January 19, 1901.

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The Week.

Nature has displayed her varied moods in great style since our last issue. Low temperatures rose to copious rains, and these to a howling norther, which carried away surplus water at a great rate and helped the farmer to quick return to his field work. Still, these changes are not ill; the season is advancing as well as could be asked in nearly all respects, and the outlook is for great production. Regions will come into full yield this year which have long had short returns, and still there is not too much in places which are usually well supplied. The distribution has been in the main to supply recent deficiencies and to wet down to bedrock some regions which have long been dry.

Things away from the farm are very active. There are many new people in the State and many of them are locating. The seed and nursery business is active and all lines of improvement supplies are moving rapidly. Building is brisk and few are idle. The outlook is very fair.

Grain is unusually active. They say it is flying away from the visit of the assessor which will soon be made. However that may be, six cargoes of wheat have gone since our last report, and one of them a whopper—5000 tons. Two cargoes of barley have also passed out, and some is going East by rail. Pacific coast barley is in great request this year. Both wheat and barley are firmly held and buyers would have to pay full prices. Futures, however, are shading down owing to good crop outlook. Oats are unchanged. Buckwheat is higher, but it has already gone beyond growers' hands. Millstuffs are unchanged. Bran is moderately firm and is largely held by one party. Hay is weak and slow, especially the lower grades. The crop outlook weakens the market, but if prices should decline a little there might be quite an outward movement to help things. Beef and mutton are quiet, but not lower. Hogs are slightly firmer. An advance of pork at the East prevents shipments this way. Butter has gone to pieces, nearly. There is a rush to unload and much common stuff in sight. The decline in the high quality is, however, helping sales, and some will be shipped out. Cheese is holding fairly, though wavering, perhaps. The Eastern market is short of cheese, but we cannot profit by that with our product of flat cheese. We must get into the cheddar line if we wish to sell outside. Eggs are lower, but are in fair demand at reduced prices. Poultry is dragging. The recent advance checked consumption and left retailers with much high-priced stock on hand, which they do not enjoy. Besides, too much Eastern poultry has come in. Beans are stiffly held, but there is not much movement. The Government has out calls for bids and holders are hoping to profit by such sale. Potatoes are unchanged, but sweets are doing better. Onions are firm and a little higher. Oranges are weaker and slow, with large offerings. Lemons are quiet and moving slowly. Apples are unchanged, with plenty of common and few choice. Dried fruit is still dormant, but holders are hopeful. The cut on large and small prunes does not yet yield results here. Nuts are quiet and a little doing in a jobbing way at old figures. Wool is still unmentionable.

Sacramento is the scene of the greatest activity this week. Besides the Legislature, which is nothing if not exciting, there have been several agricultural assemblies which have commanded wide interest. The two valleys, the Sac. and San., have been holding a joint convention and mutual admiration assembly and are inflating their sides to such an extent that the coast slides off into the sea and the south counties fade away into the indefiniteness of a mirage. We do not particularly object. The great interior valleys have too long slumbered; they have twitched a finger or toe once in awhile, but these movements have only served to demonstrate the great slumber of the body. Let the awakening come, and if it comes with a dream that they are practically the whole of the State no one will seriously object. If these valleys would really do something adequate to make their opportunities and resources known it would greatly advantage the whole State. So join hands, fair sisters, and lead the State in a merry dance if you will. You are not likely to get more State favor nor public notice than you are entitled to.

Another assembly in Sacramento was the called meeting of fruit growers to consider the general organization of fresh fruit growers and shippers and the gathering of all fruit growers' organizations into a central executive body. This meeting began slowly owing to the distractions which drew people in other ways. There was, however, quite a large collection of growers from the central part of the State and their transactions are still in progress as we close our forms. We shall have to sketch that work next week.

The sheep men gathered at the State capitol on Tuesday with a spirit which betokens the re-awakening of this important interest. It is some years since sheep men could be gathered in substance enough to cast a shadow. There have been held, however, during the last few weeks a number of local meetings and they contributed to the central assembly at Sacramento. It is pleasant to note the reappearance in public of some of the following names as we take them from the telegraphed transactions. Dudley S. Cone, A. S. Kramer, W. D. Tupper, Harry Quinn, Jacob Wollner, William Snow, V. Geneli, Geo. R. Shipp, L. C. Olcese, J. L. Seawell, U. P. Justy, P. J. Giraud, F. M. Lorriejo and others. Other of the old well-known names are missing; many of them have passed out of the worry of sheep-killing days and other wool growers' troubles. The meeting declared itself formally that the pasturage of sheep on public lands and forest reservations is prohibited, and urged that a reasonable amount of such pasturage be allowed on the basis of Government revenue, either at a tax per head on the sheep or upon each acre of land used. Delegates to the National Wool Growers' Convention, which is to meet at Salt Lake, January 19th, were chosen, and instructed to push the pasturage proposition. The wool growers also permanently organized for the purpose of protecting the sheep and wool industry of the State.

The great cattle convention is proceeding at Salt Lake as we go to press. This is a great affair and focuses the vast range interests of the country. We in California who have indulged in horticultural poetry until we are apt to think that sunshine, fruits and flowers are the only proper things to rave over, may get a broader view from a glance at the opening address of the president of the National Live Stock Association, which discloses this rhapsody:

The Western stockman, surrounded with nature's gems and benedictions, with his flocks and his herds, with his growing family and vine-covered and rose-bedecked abode, is the typical American home-builder—the prince of the continent. Happy that man and thrice blessed he who keeps in touch with nature, and can draw inspiration from the prairies, the valleys, the hills and the mountains. Little wonder is it that the Western man loves his broad expanse of verdure-clad hills, prairies and mountains; he revels in the gorgeousness of the sunsets, the peacefulness of the valleys, the productiveness of the soil, while the cattle and the sheep graze over hill and vale. His nature broadens with his generous environment, while his soul attunes to the lowing of the herds. From the eternal snow-capped peaks of the Rockies, even to the waters of the seas, his labors leave in their varied courses golden wreaths of plenty.

That is pretty good about a man whom popular conception consigns to oblivion as a bull-puncher. But the convention dropped from poetry to practical affairs and are in that line as we go to press. They have enrolled themselves actively against the Grout bill, which they claim will paralyze their industry. So we have the great cattle interests opposing the dairy in its crusade against oleomargarine. This is too apt to be forgotten. It is not only the oleo makers, but the cattle interest, which is opposing them, and the struggle is now on in the U. S. Senate. By virtue of her great dairy interest and her lack of oleo interests, California is strongly in favor of the Grout bill, and all who think that way should send their views to the California Senators without delay.

Public irrigation affairs at Washington seem to be looking both ways. The effort to get national irrigation reservoirs provided for in the appropriation bill for internal improvements has not succeeded so far. It is useless to expect it immediately. There is a great campaign of education along irrigation lines which must be carried through. It is going forward fast and will accomplish great things ere long. California will do her share in this direction. President Wheeler of the State University, who has just returned from the East, tells a reporter that, after a conference with the Department of Agriculture, and especially with Dr. True, director of experiment stations, he has perfected arrangements whereby the plans of the regents to bring the University into direct co-operation with the forestry and irrigation work under the direction of the California Water & Forest Association and the formation of a department of irrigation at the University may be carried out. It will now be possible for the students to work intimately with the general government in its irrigation work. The details will be made public soon. As an elder sister among the irrigated States, California should lead in the educational phases of the irrigation effort and President Wheeler will place the State in that position beyond question.

Southern California proposes to receive President McKinley in grand style. The date of La Fiesta de Las Flores, which has been planned by local business men of Los Angeles as the great attraction of southern California this year, has been postponed to the second week in May, so that it will serve as a feature of the presidential reception. The style of entertainment to be afforded has also been changed, and, instead of a street fair, there will be a regular floral parade, followed next day by an industrial parade. The selection of the early part of the month of flowers should give Los Angeles a chance to do her prettiest in the way of natural decorations. The President now expects to be in San Francisco May 16th to 19th. It is said a good part of the Cabinet will be in the party.

We suppose that San Francisco fruit shippers will not learn that wormy fruit is not worth shipping until every one of them makes a good large loss at it. In Vancouver the other day the Government fruit inspector examined a consignment of 700 boxes of fruit from San Francisco en route to Australia shortly before the steamship Miowera sailed for Sydney, the fruit being booked for the ship. He condemned and burned fifty-three boxes and informed the shipping clerk of the Miowera that he did not believe the rest of the fruit would pass muster when it reached Australia, as the Australian Government is very strict. The Miowera thereupon declined to accept the fruit, and the consignment has remained upon the Canadian Pacific wharf. It has been decided by the Canadian Pacific Railway to ship the fruit back to San Francisco. Thus the traffic people will make two freights and everybody else will lose. Is that the sort of business for San Francisco fruit merchants to be doing?

QUERIES AND REPLIES.

Treatment for Woolly Aphis.

To THE EDITOR:—Will you give me the results of the latest experiments with bisulphide of carbon for killing woolly aphis on apple tree roots? I have two acres of sixteen-year-old trees on light sediment soil that I wish to treat. I have read all that has appeared in the PACIFIC RURAL PRESS on the subject, and would like your advice as to the amount of carbon to use and the distance from trunk and depth in ground to put it.—C. M. CALKINS, Hollister.

Remedies which will prevent the woolly aphis from collecting at the root crown and just below, and the irritation which accompanies their presence there, will enable the tree to grow and bear well for many years, though the insect may infest the outer roots. It is hardly to be expected by any treatment to extirpate the insect, but the reduction of its injuries is feasible. The oldest way was to remove the earth about the main roots and scald the insects with hot water. The next, perhaps, was the heaping of wood ashes around the tree, from which lye would be gradually leached out by the rain, and recently kerosene emulsion and other mild insecticides have be been used in the same way. Recently, also, a very effective treatment has been found in the use of ground tobacco dust applied about the base of the tree, first removing the soil to a depth of 4 to 6 inches. For large two to five pounds of the dust may be used. Mr. Marlatt says: "The tobacco dust kills the aphides by leaching through the soil, and acts as a bar for a year or so to reinfestation. The dust is a waste product of tobacco factories and costs at the East about 1 cent per pound, and possesses the additional value of being worth fully its cost as a fertilizer." Probably California tobacco manufacturers could furnish it, or tobacco can be grown on the ranch for such use. Prof. Cockrell of the Arizona station says bisulphide of carbon can be applied in two or three holes about the tree to a depth of 6 inches to 1 foot, and not closer than 1½ feet to the tree. An ounce of the bisulphide should be put in each hole, and the holes immediately closed. This does not prevent later reinfestation, and is thus inferior to the tobacco dust, which is more lasting in its effects, perhaps. We look upon this bisulphide treatment as still open to confirmation by further experimentation.

Frost Prevention With Walnuts.

To THE EDITOR:—What can be done to prevent frost from killing the walnuts in the spring? After the buds have swelled and catkins are out two or three weeks, there comes a succession of frosty nights and one-half to nine-tenths of the crop is killed. Should whitewashing the trees tend to retard the opening of the buds? Or is there any way to keep the trees dormant and lessen the risk of frosts? If so, what is its composition?—SUBSCRIBER, Carpenteria, Santa Barbara county.

We know of no experimental data to show to what extent whitewashing will prevent activity in the walnut tree. It has been shown (see PACIFIC RURAL PRESS, Nov. 3d ult.) that at the East whitewashing twigs, branches and trunk thoroughly delayed blooming from two to six days. This may be true in California and it may not. Our heat comes on more gradually than at the East and the tree is always near the starting point in the winter. The facts can only be shown by local trial. It is possible that such light frosts as you have on the coast of southern California may be rendered innocuous by having the ground surface wet by irrigation at the time of the drop in temperature. Beyond this the same methods employed elsewhere, viz., the creation of a dense smoke by burning heaps of wet straw, etc., or the raising of the temperature by burning small coal fires in wire baskets as they do in Riverside, suspended in each tree, are open to you. There is no application to keep a tree dormant known to us except the whitening of the bark which tends toward the reflection of sun heat instead of absorption of it. Cooling the soil does not prevent activity, for the first sap pressure comes from the effect of heat upon the aerial parts of the tree.

Tree Planting.

To THE EDITOR:—Should any tree be set so that the scar from the bud or graft goes 1 or 2 inches below surface, or above? Why?—READER.

It depends upon the soil and the amount of heat and moisture to be expected. On light soils in interior valleys it is often advisable to plant lower than the tree stood in the nursery and on very sandy soils this is admissible even to a depth of 3 or 4 inches, if rainfall and surface cultivation are to be relied upon. If the trees are to be irrigated they should not be planted so deep. On heavier soils less depth should be given, and in the coast valleys, with a heavy soil and rainfall, the trees should be set little if any lower than they grew in the nursery. One has to proceed according to the best judgment he can form of the local conditions under which he is working. It should of course be remembered that it is quite easy to make a mistake and plant too deeply. We have known of large plantations in which trees have had to be lifted and reset because they had been really buried rather than planted.

The Scurfy Scale.

To THE EDITOR:—I send you a piece of what is called "birch brush," which has scales apparently like those which my neighbor has on his apple trees, injuring the growth and the fruit. What are they, where did they come from and are they easily killed?—READER, Butte county.

The scale is Chionaspis furfurus, commonly called scurfy scale, because its whitish flaky appearance suggested a resemblance to dandruff. It is a native insect and is found on wild brush and trees in large quantities. It also affects some fruit trees and is probably carried by birds or otherwise from uncleared lands to adjacent orchards. It is in the egg state in the winter and would therefore be less susceptible to destruction by lime, salt and sulphur than is the San Jose scale, which is always in active form under the scale. Probably kerosene emulsion would be more effective as a more penetrating wash. If thoroughly applied, it ought to keep the trees reasonably free from the scale. The infested environment of wild brush will, however, always furnish a resupply. Clearing, as far as practicable, would, of course, be an advantage.

Woolly Aphis on Pear.

To THE EDITOR:—Do pear tree roots have the woolly aphis as the apple roots do? There is something wrong with my pear trees; for five or six years they have not grown nor borne as well as formerly. On digging down about the sprouts that come up around the trees I find something like cotton or blue mold about the fine roots.—ORCHARDIST, Solano county.

The pear has woolly aphis the same as the apple, but it is not usually so bad a pest of the pear as the apple. The treatment is the same as described for the apple on this page. Have you not neglected your pear trees of late? This, in connection with the dry years, would have a tendency to make them unprofitable. If so, give them a good winter pruning, and a good spraying with lime, salt and sulphur. This treatment will force out a growth of new wood. Clean out all the suckers and give the ground a good manuring, plowing it in as soon as you can. Follow with good cultivation the rest of the year, and with the abundance of water which seems assured this year your trees ought to take a new lease of life.

The Black Scale.

To THE EDITOR:—Enclosed you will find some pear twigs with scale on them. Is this the brown apricot or the frosty back scale? What is the best spray or other method of killing them?—A. BABEL, Concord.

It is neither of the pests you mention, but is one of the same genus—the black scale. Use kerosene emulsion, winter strength, just before the buds open. This scale is often in good killing condition in the spring in this part of the State. Watch the trees, and, unless the winter treatment has been very effective, give another spray with kerosene emulsion, summer strength, after the fruit has set well.

Bluestoning Seed Grain.

To THE EDITOR:—If wheat and oats are bluestoned will it prevent smut, and if so, why?—GROWER, San Luis Obispo.

Bluestoning will prevent smut because the chemical is death to the spores or germs of the fungus which comprises the smut and which adheres to the grain after threshing and cleaning. These spores go into the ground with the seed and germinate, and the fungus enters the new grain plant to finally reach its full growth in the heads of the coming crop. Although bluestoning does not always prevent smut, because there may be an intrusion of germs in spite of it, the effect is generally toward the prevention of it, and that is the reason why it is almost universally practiced where smut is expected. An account of bluestoning can be found on another page of this issue.

Paris Green for Peach Moth.

To THE EDITOR:—Having read query and answer in regard to peach twig borer or peach moth in your issue of Dec. 29th, I would like to say to those who have tried kerosene emulsion, or lime, sulphur and salt wash, without success, to try Paris green—1 pound to 175 to 200 gallons water, as for codlin moth. Apply in spring just as soon as the buds begin to swell, and before the pink of blossoms shows. Spray thoroughly, and you will get the first or winter's larvæ, and so get practically all. This has been tried with success where the other remedies have failed entirely.—FRED BAISCH, Palisade, Colo.

This suggestion will be welcome to those who are striving with the insect. Has it been tried in California, and with what results?

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 14, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Conditions have been favorable for all agricultural interests during the week. Rain has fallen in all parts of the valley, and there has been an unusually heavy snowfall in the northern portion and in all mountain districts. Severe frosts have occurred in most sections, but they have been more beneficial than harmful. The cold weather has checked the too rapid growth of grain and the premature budding of deciduous fruits. Farm work has progressed slowly, owing to the heavy condition of the soil. Early sown grain and pasturage continue in good condition. Large crops of grain and fruit are predicted for the season.

COAST AND BAY SECTIONS.

The weather has continued cold and cloudy in most sections during the week, with heavy fogs in some localities, but these conditions are regarded as favorable for grain and fruit trees. Rain has fallen in all sections and severe frosts have occurred; the frosts have not been injurious, but the rain has retarded farm work and caused some damage to fields and stock in Humboldt county and other places. Tree pruning is progressing. Plowing has been resumed on sandy bottom lands. Grain and feed are in good condition. If the favorable conditions continue through the season there will be very heavy crops of all kinds.

SAN JOAQUIN VALLEY.

Low temperatures have continued in most sections during the week, with severe frosts. Rain has fallen in the northern counties and heavy fogs have been frequent in many places. Farm work has been retarded, but on the whole conditions have been very favorable. Frost has damaged pasturage in some localities, but in other respects the cold weather has been beneficial. Plowing and seeding are still in progress except on the low lands, and a large acreage is being sown. Prospects continue good for heavy crops of grain and fruit. Grain is in excellent condition, and pasturage is abundant in most places. Oranges are mostly gathered.

SOUTHERN CALIFORNIA.

Cool weather has continued during the week, with severe frosts in most places. The rainfall at the beginning of the week was very beneficial to grain, pasturage and fruit trees, and if followed by late showers will insure good crops. Some reports state that citrus fruits were considerably injured by frost, while others claim no damage was done. Deciduous fruit trees have been benefited by the cold weather. In the Santa Maria valley the seasonal rainfall amounts to over 10 inches, and grain prospects are said to be better than for several years; a large acreage has been sown, and the early grain is in excellent condition. There will also be a large acreage of beans and beets.

LOS ANGELES SUMMARY.—Rain put ground in fine condition. Plowing and seeding resumed. Grain and grass are growing finely and orchards are being cultivated. Reports continue to say that citrus fruits were not injured by frost or wind.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Jan. 16, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	2.21	31.22	33.28	20.51	36	62
Red Bluff	1.06	13.74	14.81	12 70	28	58
Sacramento	.36	10 36	13.23	9.52	32	52
San Francisco	2.49	11.61	14.28	11.41	38	58
Fresno	.08	7.03	6.11	4.33	32	58
Independence	.00	4 95	2.09	3 83	16	50
San Luis Obispo	.01	20.79	12.50	8.07	36	68
Los Angeles	.00	7.85	4.57	7.90	38	78
San Diego	.00	2.45	4.60	4.24	40	70
Yuma	.00	.02	.66	1 89	28	72

HORTICULTURE.

Irrigation and Hardpan.

By Prof. E. W. Hilgard of the State University at Riverside Farmers' Institute.

The difficulty of the average man in breaking loose from old traditions is forcibly illustrated in some of the cultural practices which, despite sad local experiences, are still perpetuated in California, for the reason that our forefathers in Europe and the eastern United States have found them good, regardless of the fact that circumstances alter cases and that the prescriptions which have held good for centuries in the old country may be wholly out of place here in the arid region, or may need to be materially modified in their application.

While it is true that the most ancient civilizations of the world have existed in arid countries, it is also true that the modern development of sciences and arts has taken place almost wholly in the humid countries of Europe and America. Now, while the principles of science and art must be the same everywhere, the application of the sciences bearing on agriculture to its practice must of necessity vary with differences of climate and soil, very much as does the natural vegetation. We shall vainly try to make the skunk cabbage and May apple of the East grow in California, no matter how much water we may supply them; and, vice versa, the cactus and gray sage of the arid region will fail to thrive in the regions of 40 to 60 inches of rainfall unless artificially supplied with the conditions prevailing in their native home, not merely as to moisture, but also in respect to soil and air.

Our Eastern friends commiserate us on account of our being obliged to irrigate; and when they come here to live and farm, their only idea is that (as irrigation replaces rain) as soon as that is attended to, the rest may be done just as it is in the Atlantic States. That this frequently proves a very costly delusion, I need not explain to this audience. But I do find it necessary to call their attention more pointedly to some of the points too frequently ignored or neglected, wherein our practice should and must materially differ from the Eastern, which fortunately is still intuitively regarded, especially in the East, as the normal thing to be done everywhere, simply because the forefathers have "proved" it to be the right thing in their home. I must admit that not only the farmers, but even the men of science, have fallen into this rut, and will hardly believe that the natural conditions with us are so different from their "normal" ones as to necessitate serious differences in practice. The indulgent smiles I have so often seen in the countenances of my scientific brethern in the East and in Europe, when I insisted on these points, usually expressed the idea of a "California yarn" forgiven because of the influence of the climate upon the imaginations of those who dwell therein.

Soils East and West.—The most important differences in our farming practice as compared with the East arise from the fact that, unlike the lands of the regions of the summer rains, ours have in most cases practically nothing that properly corresponds to the "subsoil" of the Atlantic States. The Eastern subsoil differs from their surface soil in that usually it is more dense and clayey than the surface soil. It is practically destitute of humus or vegetable mold and is "raw"—that is, unfit to serve for crop growth if it were on the surface. Hence if in subsoil plowing it were turned up to any considerable extent, it would ordinarily mean the failure of at least one succeeding crop.

The formation of this clay subsoil is due primarily to the moist summer air and heavy rainfall. The former, as is well known, favors the formation of clay; heavy rains then form turbid clay water, which in soaking down is detained in the subsoil long enough to deposit most of its clay, and thus continually increases its heaviness. Hence we usually find, in the East, the surface soils very much "lighter" than their subsoils.

But the same is not true of our California soils. In by far the majority of cases, there is no sensible difference as to clayeyness between the surface soils and immediately underlying subsoil mass, often to the depths of 5 and even 10 feet. Clay forms very slowly in dry climates, and there are no beating rains to wash it into the subsoil. Hence the latter remains porous, and both water and air penetrate freely and easily to great depths; and hence again the roots, which, like the rest of the plant, require the presence of both, also penetrate and exercise their vegetative functions at these depths not only in the absorption of water, but also of nourishment, for, in consequence of the penetration of air, the substrata are not "raw," as in the East, but contain available plant food throughout their mass. Instead, therefore, of being compelled to draw their nourishment from 6 to 9 inches of surface soil, our trees can naturally feed upon 5 to 10 feet of soil mass in our valley lands. Add to this advantage those of a natural supply of most kinds of plant food several times greater than in the average Eastern soil, and it certainly seems strange that the cry for fertilizers should be so early raised in the face of such natural advantages.

Plowsole and Hardpan.—But the strangeness disappears when we examine the methods of both cultivation and irrigation so commonly in vogue. Plowing to the same depth year after year, and irrigating frequently in shallow furrows, we produce artificially the very conditions which in the East produce the close subsoils, difficult to penetrate by both air, water and roots. In the East the impediment thus artificially created is called a plowsole; in California a new name has been invented for it, viz., "irrigation hardpan," and much ingenious speculation has been indulged in as to the cause, supposed to be a chemical change in the soil.

Cause of Trouble.—In none of the cases that have come under my observation can there be any question as to the real origin of this trouble. Under the influence of the Eastern tradition, our farmers have been afraid to plow to more than the Eastern allowance of soil depth, uniformly, year after year, with irrigation furrows to the same depth, or less, and a tendency to irrigate as frequently as possible, in imitation of Eastern rains. One need only glance at the turbid water often seen in these furrows, and at the shining streaks behind the plow soon afterward, to understand that, in lands at all clayey, a solid plowsole will form here as in the East—the more as few persons ever undertake to ascertain by actual examination how deep the irrigation water has penetrated during the time allowed by the zanjero. No wonder that, when a large part of the water runs off above the plowsole, despite the irrigation, the deeper roots are often found to be in dry earth, and white-spotted leaves and "dieback" afflict the trees, while the soil above the "irrigation hardpan" is filled with white roots that should be active in the depths of the land; but within their limited range they must needs be fed with fertilizer to fill the place of the adundant supply that lies in the substrata, but is rendered unavailable by the plowsole.

There is, of course, no remedy for this evil except to break up the plowsole, white roots and all; and to prevent the recurrence, the land must, as should always be done, be plowed to different depths every alternate year. In doing this we need not hesitate, in nine cases out of ten in this State, to put in the plow to the full depth to which the team can pull it. In order to avoid the excessive root pruning that might thus be brought about, it is only necessary to put the irrigation water itself where it will do the most good—to wit, in deep furrows from which it will soak down rapidly to wet the substrata, leaving the surface only moderately moist by soakage from below (capillary ascent), and causing the roots to descend into and utilize the entire soil mass, as do our native plants, instead of a paltry surface layer of 12 or 15 inches only.

Deeper Irrigation.—To put the matter plainly, the question is whether we shall aim to utilize the soil mainly in a horizontal direction only, or chiefly downwards, or both. The former alternative is the one adopted by most of our irrigators at the present time, by the practice of shallow cultivation and equally shallow furrow irrigation; the second was the choice of those who in early times practiced the original method of basin irrigation, in which the water was applied in circular basins, or rather trenches, dug around the trees—a wholly different procedure from what has been wrongly called basin irrigation of late, viz., the application of water in basins formed by throwing up a square levee around the trees and flooding the surface, as well as the base of the trees. This is a kind of a check irrigation, misapplied where it will do the most harm by compacting the surface where it cannot afterwards be cultivated except by hand, and chilling the trunk and main roots so as to sometimes cause the dropping of fruit.

Considering the frequent scantiness of the water supply, especially in southern California, I think there can be no question as to the advisability, in the first place, of utilizing the water to the best advantage and, secondly, preventing the tree roots from remaining close to the surface in white masses like the corn roots in Eastern corn fields, when, if water should not be available promptly during a hot spell, serious injury may quickly result. No such stress would arise if, in imitation of our native plants, the feeding roots were at such a depth below the surface that the heat and drouth could not reach them within any brief delay in irrigation. In some localities they would not suffer materially without irrigation if their roots had been taught from the outset to descend into the moist depths of thoroughly winter-irrigated land.

How to Begin.—Whether or not they shall do this depends largely upon their treatment of the trees while young. If, in order to push their growth and bring them into bearing, the orchardist starts in by manuring and irrigating them abundantly and frequently, in accordance with Eastern ideas, his trees will make Eastern shallow roots, having no inducement to seek the depths of the soil. Such a root system being once formed, the practice which brought them about must naturally be continued, with a wholly unnecessary, extravagant expenditure for both fertilizers and frequent irrigation; for what shall it profit a tree to have had the land thoroughly soaked in winter, whether from rains or irrigation, if it has no roots sufficiently deep to utilize that stored moisture.

It seems to me that the advantage of a year's earlier bearing of an orange grove is very dearly paid for by such life-long dependence on fertilization and punctual irrigation as we so commonly see now.

It is true that this condition is irremediable, but has to be paid for by subsequent probable losses of crop resulting from the pruning off of the superficial roots that must be done in order to aid the formation of a deep-root system. I say "probable" losses, because I have known cases in which no such loss followed the courageous adoption of a rational system of deep cultivation and irrigation in deep furrows few in number, from which the water soaks chiefly downward, where it is wanted, to store moisture out of reach of evaporation and to cause the root to follow its lead.

Natural Hardpan.—If an artificially formed hardpan or plowsole is bad, a natural one is worse, because it is of such thickness that it cannot be destroyed by any practically feasible means. Sometimes, in the case of orchards, it is feasible to shatter it by means of dynamite charges in the tree holes; and this has served to relieve the situation in many localities in the State where otherwise no orchards would have been possible. But this possible remedy is expensive and sometimes fails to afford permanent relief, because certain kinds of hardpan with copious irrigation relapse into their original condition. At present at least the lands so constituted naturally had better be used for annual crops only.

Few persons outside of the experiment station can have an idea of the extent to which the planting of orchards on shallow soils underlaid by hardpan or heavy clays has caused pecuniary loss, often almost ruin, to old-timers, as well as new-comers to the State. Every few days there come to us, at Berkeley, letters transmitting samples of tree branches having the "die-back," and asking about the means of relief. We might usefully stereotype the first letter in reply to such inquiries, briefly to the effect: "Examine your subsoil." In nine cases out of ten it is either hardpan or an impervious clay substratum, which deflects the roots sideways after the second or third year, and of course prevents a healthy, normal development toward the moist depths of the soil, where abundant plant food awaits them in all good orchard lands. More rarely it is a layer of coarse sand or gravel which prevents the rise of moisture from below; sometimes it is the rise of the bottom water, which causes disease of the deeper roots and also starves the tree. Almost invariably the question is asked, "What fertilizer must I apply to remedy the trouble?" Well, in most cases, no fertilizer of any kind will remedy the difficulty, the existence of which should have been ascertained before planting the orchard, or, better, before buying the land at all. Even in the East and in Europe, careful farmers scrutinize the subsoil before investing. In the arid region this is tenfold more needful, because of the critical importance of the subsoil, overshadowing that of the surface soil, as already explained. The irrigator, who pays so dearly for his water, is doubly interested in it, and ought always to know how long it takes water to soak to a certain depth in his land, so as to be sure that it does not run off the surface of natural or artificial hardpan, instead of soaking down and running to the neighbor below.

How to Find Hardpan.—This seems to be such elementary common sense that it is difficult to understand how it is so widely neglected, despite the warnings so emphatically conveyed by experience, and published by the experiment station for twenty years past. No farmer should be without that simple and cheap, though murderous-looking, instrument, the soil prod, which is here before you—a steel rod three-sixteenths to one-fourth inch square, well pointed at one end and provided at the other with a stout ring for a wooden cross-handle, like a common auger; length from 4 to 5 feet, preferably the latter; cost, 75 cents. Force this into the ground with a slight turning motion back and forth, hanging to it at first if you are of low stature. You will be surprised at the new information conveyed by this simple process within the two or three minutes it takes to make one sounding; and if any doubt remains at some point, the common posthole auger may be able to supplement the prod. But with a little experience, the prod alone will suffice to tell you, by the change in resistance, even how deep the irrigation water has penetrated in your land. In many cases such information will astound you by its unexpectedness and make you understand why certain trees in your orchard have done so poorly or so well.

However important is the presence of the plant-food ingredients in the soil, the fundamentally needful point is the proper physical condition, without which no amount of fertilization or natural productiveness is of any avail. All understand the need of moisture; but, unless care is taken to see that it gets where it will do the most good, and that the roots can perform their functions in the depths of the soil, water, work and fertilizers may alike be wasted.

CEREAL CROPS.

Stinking Smut of Wheat and its Prevention.

By the Botanist of the Arizona Experiment Station.

While walking through the stubble field in the vicinity of Tucson recently, the writer chanced to pluck a few heads of wheat which had escaped the sickle. On attempting to thresh out the grain, every kernel was found to be destroyed by what is known as "stinking smut." Further examination of the straw lying upon the ground revealed but few unsmuttered heads. The foreman on the ranch reported that about one-third of the grain hay raised in this field had been smutted with this fungus for the past two years—the seed each season having been obtained from Indian sources. He reported still further that the seed sown had a very bad fetid odor, indicating, without much doubt, the presence of this disease.

After making inquiries of several responsible individuals regarding the prevalance of smutty wheat, a circular letter was addressed to the millers of the Territory, asking them for certain information upon the subject. Returns from these letters indicate that more or less smut is offered for sale at all the mills heard from, and that the quantity varies from 2 to 20% of the total amount purchased. In one instance fully one-half the flour ground is reported to be dark with smut. One correspondent reports wheat to be injured to the extent of 50% of its value for milling purposes, while another speaks of wheat offered for sale which he refuses to buy at any price. The returns show still further that all but one of the Indian tribes in the Territory invariably raise smutty wheat. Our own observations regarding crops raised from seed bought of them indicate that there are some cases in which their crops are in a deplorable condition indeed.

Smut is caused by a parasitic fungus, the spores of which may be found in the "hairy ends" of the kernels of "smutty" wheat. These spores germinate at the same time as the wheat, and send small tubes into the young plants. These develop and grow apace with the wheat the entire season; but cannot be seen, except by the aid of a microscope, until the berry begins to form, when the fungus distorts the kernel and fills it with a smutty mass of spores covered with a thin shell. When this shell is broken by threshing, the spores are set free and cling to the "hairy ends" of the healthy berries, where they are again ready to produce another crop of smut the next season.

There are many diseases, some of them occurring in Arizona, which have baffled every attempt of the investigator to subdue. Some have received but little attention, and it is hoped future investigation may bring them under control. These facts, however, do not apply to the "stinking smut" of wheat, for it has been demonstrated repeatedly that certain treatment will destroy the fungus which causes this disease. There is, therefore, no good reason why the farmer should go on raising smutty wheat year after year when a little time and patience will increase his crops and furnish him more marketable returns for his labors.

The remedy is simple and easily applied. Any farmer can, by the expenditure of a very small amount of money, treat his seed wheat in a manner that will insure his crop against an attack of this fungus. He needs for this operation four things: Bluestone, or copper sulphate, a good quality of lime, some large vessels which will hold water, such as tubs or barrels, and a place to spread his wheat out to dry when he is through treating it.

The operation is as follows: One pound of copper sulphate is dissolved in twenty-four gallons of water. The seed is soaked in this solution for twelve hours, after which the liquid is drained off, and the seed is again soaked for ten minutes in limewater made by slacking one pound of lime in ten gallons of water. After drying, the wheat can be sown at any time without any danger from the effect of smut.

The process tabulated is as follows:

1. Soak seed for twelve hours in copper sulphate solution. 2. Soak seed for five to ten minutes in limewater. 3. Dry the seed. 4. Sow the seed.

The only object in drying is to facilitate the scattering of the wheat. Where the acreage is small and the sowing done by hand, the drying can be dispensed with.

Enough of both copper sulphate and lime solutions should be used to thoroughly wet the grain. Piling the wheat on a barn floor and sprinkling it with the solutions will not give the desired results. It is better to fill a barrel two-thirds or three-fourths full of wheat and then pour in enough of the solution to more than cover the seed. The barrels can be arranged with a plug near the bottom, by means of which the liquids can be drawn off at the proper time and used again in the treatment of anotner batch of wheat.

This method of treatment with copper sulphate and lime solutions is the one commonly practiced and usually recommended for the prevention of "stinking smut." If handled according to the directions given above, there need be no fear from this disease. In this work, as in all others, the farmer should be thoughtful and clean in his operations. After the wheat is treated, it should not be put back in smutty sacks, nor in bins which have had smutty wheat in them, without first destroying the smut. This can be done by treating both sacks and bin with a copper sulphate solution of twice the strength quoted above, or by thoroughly soaking with boiling water. The seeder should also be thoroughly cleaned and the box and cups treated with either boiling water or a strong solution of copper sulphate.

It must be constantly borne in mind that copper sulphate is a poison. Care should, therefore, be taken that chickens and stock be not allowed to eat the treated wheat.

There is practically no danger in planting in ground which produced a smutty crop the previous year. If clean seed is planted, no smut will be raised.

There are many other species of smut, and doubtless some of them do considerable injury in Arizona; but the disease in which the writer has reference to is intended to cover the question of "stinking smut" only. Indeed, botanists recognize two species of "stinking smut;" but the treatment given above will destroy both.

THE DAIRY.

Dairy Sanitation and Inspection in California.

Last week we alluded to the report of Secretary Vanderbilt of the California Dairy Bureau and cited some of the statistical results attained. As the report will have but a limited circulation, we desire to promote the work of the bureau by giving it the benefit of our wider distribution among those on our dairy farms who are directly interested in all efforts to promotc healthfulness and profitable production in their animals. For this reason we take at this time a sketch of what the bureau advises and undertakes to do in dairy sanitation and inspection:

Tuberculosis.—We are pleased to report a cessation, on the part of the press and many health officers of the State, of the radical agitation for the compulsory application of the tuberculin test to all dairy cows and the destruction of all that show a reaction. This test, as is well known, is applied to animals as a diagnostic means for determining the presence of tuberculosis, a disease generally believed to be the same as consumption among the human family. At the time of cur former report in a few counties local laws were enforced along the lines of this agitation and large numbers of dairy cows were condemned, and efforts to secure similar legislation throughout the State put the dairymcn in a high state of alarm, for, as far as this work was carried out, here and elsewhere, it indicated plainly that they would sustain an enormous financial loss.

Tuberculosis among cattle and its relation to the public health has received, probably, more attention during the past ten or fifteen years than any other in the field of medicine. The results of the earlier investigations with tuberculin began to point to the cow as the primary cause of this dread disease among the human family. It is upon the first investigations with tuberculin that the agitation mentioned rested. For a number of years this bureau has carefully noted the progress made in investigating this disease, and the work done to control and eradicate it by legislation. It cannot help but note that of late years leading authorities are not so positive as to the part the cow plays in the distribution of this disease among the human family, and the necessity for destroying all animals that react to the tuberculin test. Until more positive proof is produced, it seems certainly unfair that the dairy industry should be compelled to make this enormous sacrifice. Vigorous efforts along the line of the compulsory application of the tuberculin test and the destruction of all reacting animals, without satisfactory results, have been made in European countries and some of the Eastern States, and large sums of public money have been expended to indemnify owners for loss of stock. The case of the State of Massachusetts may be given as an example where such efforts, extending through a period of years, have failed in their radical methods. According to the last report of the Cattle Commission of that State, it has abandoned this course and is confining its efforts along the line of improving the sanitary condition of her dairies. Other States also have taken up the work of dairy sanitation.

Sanitation.—In our former report in this connection we mentioned the need of better sanitary condition of our dairies, and deprecated the use of animals that were physically unfit to be used for the production of food products. That a system of inspection or supervision on the part of the State of our dairies is needed no one who is familiar with dairying, as it is commonly conducted in California, can deny. Such a system has long been advocated by progressive dairymen themselves. It would, at least, be a compromise between the radical methods referred to and the dairyman whose financial interests are at stake. Acting upon this policy, a bill was introducced during the last session of the Legislature to provide for a system of dairy inspection through the Dairy Bureau, giving it authority to compel owners to improve the sanitary condition of their premises and prevent the use of animals for dairy purprses which a physical examination shows are unfit. This bill passed the Legislature, but failed to meet with executive approval. Later a substitute was introduced, which was passed and approved.

Dairy Inspection.—The dairy inspection law requires the bureau, through its agents, to inspect all dairies in the State and investigate their sanitary condition and the condition of the animals used upon complaint made to it. It is apparent, from a reading of the law, that the bureau cannot legally inspect a dairy or creamery without a formal written complaint, and the Attorney-General has given his opinion to this effect. Like other articles of commerce, most dairy products are not consumed near the place of production, but are obtained in the markets at the points where they are consumed, so that the consumer has no knowledge of the conditions under which they were produced. It would, therefore, be a vain hope to wait until the consumer enters a complaint. The persons most likely to know the conditions of an unsanitary dairy are the neighbors, and in all probability, being dairymen themselves, are the most unconcerned. The bureau has earnestly endeavored to find a way in which it could legally perform some beneficial services under the Act, but it fears that it has not been able to do what the advocates of dairy inspection had hoped of it. We earnestly recommend that the law be amended to eliminate the complaint feature in Sec. 2 as follows:

> It shall be the duty of the State Dairy Bureau, through its general agent and assistant agents, from time to time, as may be required, and at least once a year, to inspect all the dairies and creameries in the State and to carefully investigate the sanitary conditions of the same. Said bureau, through it agent and assistant agents, shall, at the same time, inspect all cattle, horses and hogs belonging to, in use by, or appurtenant to such dairies and creameries, for infectious and contagious diseases, such as are enumerated in Sec. 1 of this Act. After such inspection, if said agent or assistant agent believes, or has reason to believe, that any contagious or infectious disease exists among the stock inspected, he shall immediately notify the State Veterinarian, setting forth the facts, and said State Veterinarian shall forthwith act upon such notice.

When the law went into effect the bureau undertook to perform its duties under the Act. All the printing for the bureau having, according to law, to be printed at the State Printing Office, and not having an appropriation, that institution was closed until July, 1899, and the work was delayed several months until the necessary blanks and printed stationery could be procured. The State was divided into thirteen districts, in each of which a resident assistant agent was appointed and authorized to make inspections of dairies and creameries. They were paid per diem for their services and their necessary expenses. A letter, with a copy of the law, was sent to the board of supervisors of each county, and also to the health officers of each county in the State, with the hope that upon learning of the existence of the law they would co-operate and make complaints to the assistant agents of their districts.

Immediately after the law went into effect a number of enterprising dairymen applied to the bureau, asking it to make an inspection of their dairies so that they would procure a certificate of inspection from the bureau to the effect that their dairies were in good condition. Believing that a great amount of good could be accomplished in this way, the assistant agents were authorized to make inspections of dairies upon the written request of the dairymen. It is under this arrangement that most of the inspections have been made. The serious fault with this procedure is that requests are generally received from the better class of dairymen, and our agents, with few exceptions, find them satisfactory, while, on the other hand, dairymen who have doubts as to their premises and animals passing inspection will not make the request.

It is among the latter class that inspection is so seriously needed. Speaking of inspections by request, however, it is gratifying to report that better results have come from it than we anticipated, and has helped to stimulate interest and self pride among our dairymen for improvement and progress.

The dairy inspection law also directs the bureau to investigate all reports of contagious diseases among dairy stock, and to report their existence to the State Veterinarian. This has been done in a number of cases that have been discovered by the bureau. Based upon such information as we are able to obtain, it can be said that our dairymen have suffered comparatively little from contagious disease among their herds up to the present time.

To present the details in regard to the inspection of dairies would increase the size of this report far beyond the funds available for its publication. For the sake of necessary brevity, the work has been summarized as follows:

Total number of dairies inspected	823
Total number of creameries inspected	32
Dairies found to be in an unsanitary condition, and which have been improved through the orders of the Dairy Bureau	83
Total number of cows inspected	44,253
Total number of cows condemned as unfit for dairy purposes	536

Feeding Beet Pulp.

Sugar beet pulp is rapidly gaining in favor for stock feed both along dairy and meat lines. The Oxnard sugar factory in Ventura county is doing much with it, and the account as given by the Courier is interesting.

SILOS FOR THE PULP.—At the silos there are four excavations, the two larger ones being on an average of 250 feet long, 45 feet wide and 9 feet deep, and the two smaller ones 250 feet long, 35 feet wide and 9 feet deep. The sides are sloping and the pulp is filled in to a level with the surface of the ground. The two smaller ones, the only ones filled this year, contain 224 cars of pulp with an average weight of twenty-five tons to the car, making the amount of pulp stored approximately 6000 tons. On September 14th work was begun on filling in the silos, and it was of much interest to farmers and stockmen, who think of using the pulp for stock feed in the future. A flume extended out from the north side of the factory to a length of 300 feet, and within it a large belt 2 feet wide conveyed the pulp to a track at the end of the flume, where the cars stood waiting to be filled. When a car was loaded it was run down to the excavations, the sides of the car were taken out in sections, and the pulp unloaded into the trench with forks.

AN ACCIDENT.—The pulp weighs sixty pounds to the square foot, and is heavy enough to pack itself when thrown into the silos, and when filled in to the surface presents a very stable appearance. In fact, it looks so solid that on October 16th, when a band of steers broke loose from the pens and made a stampede to escape they did not hesitate to rush across the silo, and almost before anyone was aware of it twenty head were floundering in 9 feet of soft pulp. The mass was of sufficient volume, however, to keep them from sinking entirely out of sight, and was hot enough to make them fighting mad. Arope was thrown over the head of each one, and he was dragged out by main strength, to run every man through a fence upon gaining the land.

FEEDING PENS.—Near the silos stand the stock yards, which were built under contract by F. O. Engstrum. They consist of sixteen pens, each surrounded by high barbed wire fences, 1968 feet of troughs in which the feeding is done, sheds, hay racks, watering troughs, etc. The feeding troughs stand with the bottoms 2 feet from the ground, and are about as large as the watering troughs in common use in the county. They are placed in each pen so as to furnish feed for seventy head of stock, and in this way over 1000 head of cattle are fed at one time.

The manner of feeding is also of interest. Specially prepared cars are run down to the silo and loading begins from one end, and as the feed grows less works toward the opposite end of the excavation. The cars are run out and lead directly into the stock yards, where three tons are unloaded in the troughs of each pen.

Not only has the pulp been successfully siloed at the factory, but it has also been successfully shipped and siloed at Los Angeles and other outside points at a very low price, Undoubtedly many stock raisers along the railroad will regularly prepare to feed their cattle in this way. Farmers also haul the pulp away in wagons and feed at home without siloing.

THE APIARY.

Honey Making in Nevada.

J. T. Hammersmark gives the American Bee Journal an account of his observations in Washoe valley, Nevada: We are in a valley 10 by 15 miles, entirely surrounded by mountains. This and some of the neighboring valleys are very fertile, where water is to be had, but where it is lacking sagebrush and jack rabbits hold the fort. Some few scattering scrub pine trees are to be seen on the mountains. This is all that is left of what used to be a great forest some years ago. The valley is well populated with thrifty and well-to-do ranchers, cattle and sheep men, and beekeepers. It is about the latter class and their industry that I will give a short sketch.

The beekeeper's calendar here is just the same as in the Eastern States. We begin our work about the 1st of April and finish up about October 1st, or as soon thereafter as possible. We are not troubled here with the wintering problem, as bees winter well on the summer stands. A great deal of alfalfa is grown here. Two crops of hay are cut each season from this source and the third crop is sold for fall pasture to men who turn their herds and flocks on these fields, which are in a few days grazed to the ground. Our source of honey is alfalfa. It is a very prolific yielder when the conditions are just right. It is something like white clover and basswood in regard to the amount of nectar it secrets; some years it yields more nectar than others, still it is not so subject to short and uncertain crops as the above mentioned, and many other nectar-yielding plants of the East. One is always sure of a crop, although it may not be more than forty to fifty pounds per colony some seasons. The average yield for twenty years, I feel safe to say, would not be less than 100 pounds per colony of comb honey. This is judging from past records.

The past season Mr. Hash's crop was 30,000 pounds of comb and extracted honey, being the smallest yield per colony he has had in twenty years, and this was an average of fifty pounds per colony. Some people have asked if alfalfa honey is of good flavor. To this query I can say, yes. The alfalfa honey of this region is preferred to that of California by buyers. In my estimation it comes next to pure white clover honey, if I have any preference at all.

The climate of this high altitude is simply fine. Reno 4479 feet above sea level. Snow can be seen on the tops of the highest mountains nearly all the year round. Beekeepers at Reno are now suffering from the fact that the place is overstocked with bees, for there are many fine locations in the West, especially if a man has $2000 or $3000 to buy out a well-started place—a man with $400 or $500 could get a good start, but of course he would have to depend on other income aside from his bees for a few years until his stock increased to from 300 to 500 colonies, at which time he could depend on making a good living, and most likely accumulate a nice little bank account from the product of his bees besides.

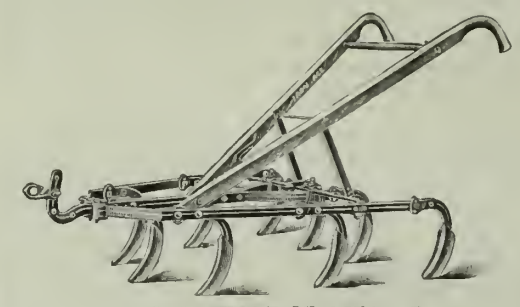
There is another thing I have not mentioned. Alfalfa, I am sorry to say, is cut in its best bloom for honey. I noticed that the bees did not, the past season at least, work more than seven or eight days on each crop before it was cut. It is of the sweet clover order. It commences to bloom about July 1st, and will bloom for ten weeks or more if not cut. What a lot of sweet could be produced from 1000 acres of alfalfa raised for seed!

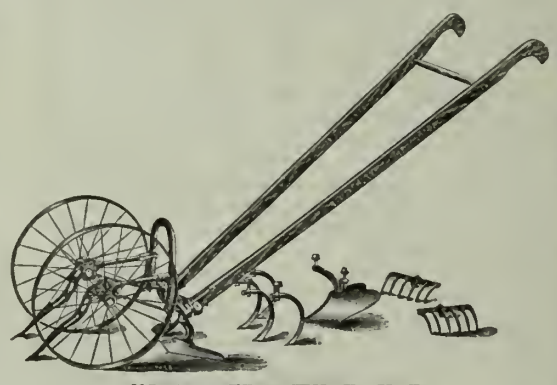
A "BARREL" is an indefinite term. The "barrel" of the schools is 31½ gallons. The "barrel" of statistics is 42 standard gallons of 231 cubic inches each. A barrel of petroleum varies from 40 to 50 gallons. The Canadian barrel is 35 imperial gallons of 277.27 cubic inches each, hence contains 9704.4 cubic inches. The American standard barrel is 9702 cubic inches.

TO FIND the number of gallons of water that a pump of given size is capable of raising in a given time, multiply the square of the diameter of the water cylinder in inches by four and by the piston speed in feet per minute; divide the result by 120; the quotient will be the number of gallons per minute.

CULTIVATORS of All Kinds.

NO. 5—DRILL SEEDER.


NO. 5—ORCHARD CULTIVATOR.

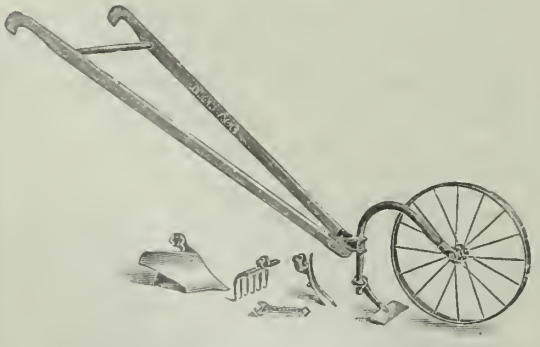

NO. 1—DOUBLE WHEEL HOE.

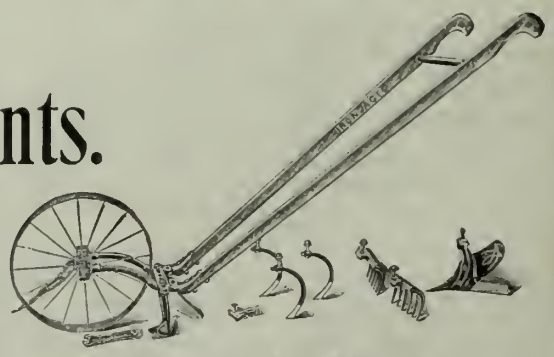
THE NEWEST LINE OUT.

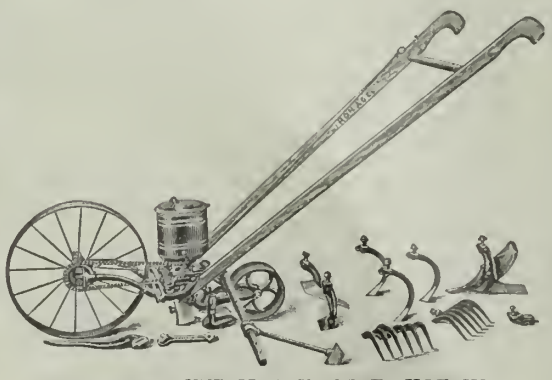
IRON AGE
Garden Implements.

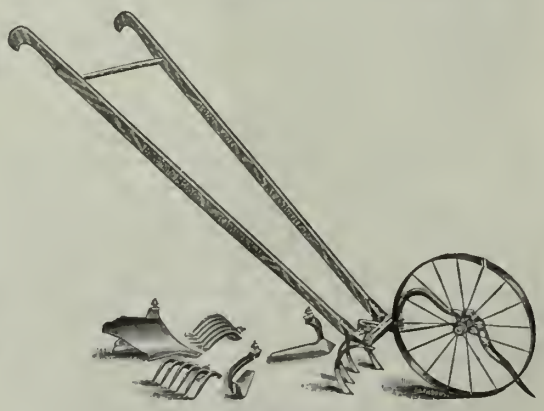
(WRITE FOR SPECIAL CATALOGUE.)

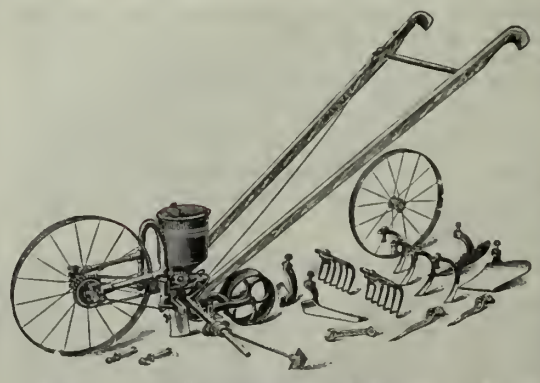
BAKER & HAMILTON,
SAN FRANCISCO,
Sacramento, Los Angeles, Portland, Or.


NO. 12—WHEEL PLOW AND CULTIVATOR.


NO. 20—SINGLE WHEEL HOE.


NO. 15—COMBINED SINGLE WHEEL HOE, HILL, AND DRILL SEEDER.


NO. 9—SINGLE WHEEL HOE, CULTIVATOR, PLOW AND RAKE.


THE NO. 4—COMBINED DOUBLE WHEEL HOE AND DRILL SEEDER.

Full Line of Planet Jr. Goods.

Agricultural Review.

ALAMEDA.

LOCK YOUR CHICKEN HOUSES.—Oakland Enquirer, Jan. 11: A story comes from Haywards which should cause all poultry breeders to put extra locks on their chicken houses. Hans Sorenson is a farmer and chicken raiser near Haywards. Friday about midnight a commotion in the chicken house awakened a woodchopper in Sorenson's employ and he slipped out to learn the cause of the disturbance. Soon a mix-up of men and chickens aroused Sorenson, who hastened to reinforce his employe. In the darkness he pulled two men apart, and the intruder, seeing that he was overpowered and in danger of severe castigation, begged piteously, telling a hard-luck story of a family out of provisions with no one at work, and closed by giving the name of a young man well known in this city. His appeal had the desired effect and he was released. Taking up the gunnysack which he had brought as a receptacle for his loot he left the building, and Sorenson was surprised to see him mount a bicycle and ride away. His surprise was increased when, shortly after daylight yesterday morning, his woodchopper told him that the midnight visitor had just passed the place in company with a chicken peddler. Sorenson believes he was imposed upon, and he will call at the address given him before, requesting the officers to look out for a tourist on a wheel accompanying a chicken peddler.

BUTTE.

PEACH PITS FOR FUEL.—Chico Enterprise: Peach and apricot pits are fast gaining favor in this locality as a first-class article of fuel. Where there have been in years past hundreds of tons of these seeds thrown to waste, it is not at all likely that there will be any of them thrown out in future. There are several families and a few business men in the vicinity of Chico who are this winter burning peach seeds for the first time, and they are found to furnish fuel of a superior quality. This is especially true when used in air-tight stoves for heating purposes, and some consider the seeds as far superior to coal. It is claimed for the seeds that they make just as hot, if not a hotter, fire than either wood or coal, and that they are 75% cheaper.

PRUNES BURST A WAREHOUSE.—Chico Enterprise: The Chico Fruit Packing & Warehouse Co.'s warehouse is practically in ruins and thousands of dollars' worth of prunes contained therein will necessarily have to be handled very quickly, if at all. The immense weight of the fruit which has been in the company's large warehouse near the railroad, between Sixth and Seventh streets, this afternoon proved too much for the underpinning of the structure. With a crash that was plainly heard all over the city, the large structure settled to the ground, badly twisted and shaken, while prunes that were stored in large bins poured through the walls in many openings.

EL DORADO.

CHANGES NEEDED IN THE ESTRAY LAWS.—El Dorado Republican, Jan. 10: The stock men of this county complain that the laws in relation to taking up estrays that become a nuisance are not what they ought to be. Under the present law a notice is filed with the county recorder concerning the animal, and if the owner does not recover it the animal is sold at constable's sale. The stock men complain that they can not afford to constantly examine the county records for notice of estrays, and that the law is defective in not giving publicity to a description of the estrays. What they want is some simple process, not requiring much expense or trouble, whereby those who take up animals will be required to publish accurate descriptions, so that the owner can have a chance to recover them, and under which those who take up the animals will not be required to hold them till they eat their heads off before they can be disposed of. At present a great many people voluntarily advertise stock that they take up, but a stock raiser has no guarantee that his property will not be sold before he is aware that it is taken up.

FRESNO.

ORANGES AND LEMONS YIELDING WELL.—Reedley Exponent, Jan. 13: The Carmelita and Campbell Mountain orchards have produced several carloads of oranges and lemons during the past three or four years. The California Vineyard Co. has also produced several carloads for a longer period, the company's place being on the plains. T. L. Reed has a grove right on the bank of Kings river, which has produced a nice crop for three years past; this orchard is 50 feet above the water table, proving that the soil retains the moisture when well irrigated in July. A. T. Simpson, at Reedley, has a few fine trees that have been loaded for five years. J. R. Reed has a fine grove and the lemons on his trees this year were immense.

HEAVY SEEDING OF ALFALFA.—Reedley Exponent: O. S. Brewer, who purchased the half section of land recently in section 11, township 16, range 23 south of town, is now preparing it for alfalfa and will sow about 200 acres right away. This gives promise of making one of the best alfalfa fields in this section.

BIG CROP OF WEST SIDE GRAIN PREDICTED.—Fresno Democrat: S. F. Booth, district agent for the Southern Pacific, says that as near as he can judge, the report that there will be a big acreage of grain on the West Side this spring is correct. The season is more favorable than for years, and it would seem that after a long time the hopes of the ranchers in that region will bear fruition.

HUMBOLDT.

HIGHEST WATER IN FIFTEEN YEARS.—Eureka Standard, Jan. 9: What is said to be the worst storm in many years appeared to have been broken about noon to-day, when Old Sol showed his face through the clouds in the south. The storm commenced here Tuesday evening and since then it has rained almost incessantly, swelling all the streams of the county, particularly Eel river, which yesterday, having risen at the rate of a foot an hour, reached its maximum height last night, when it was reported level with the floor of the ferry house on the high bank of the island opposite Singleys station on the E. R. & E. R. R. However, last night the temperature commenced to fall and with it the river, as the rain in the mountains was changed to snow, and further damage from flood was prevented. The more serious damage along the river is yet to come, when the cutting of the banks by the falling water commences. So far no serious damage has been done to the railroad along the river, although the track is under water in places.

BIG TIMBER SALE.—Eureka Standard, Jan. 2: The sale of a large body of timber land has been made to J. E. Henry & Sons, of New Hampshire, through C. E. Pearsall. The same parties have made one large purchase before, through W. W. Stone, of Arcata. This, with the former purchase, will give to this firm a total of 28,818 acres. We understand that the coming of these gentlemen means the opening up of a large and increasing lumber trade with the Middle and New England States.

KERN.

PROFITS OF PRUNE RAISING.—Kern County Echo: One of the most practicable branches of horticulture in Kern county is prune raising. The long dry summers are particularly favorable to the curing of the fruit in the open air, and the soil seems well adapted to the production of that fruit. We give herewith an exact statement of what has been done on a small farm of twenty acres. The land was purchased about 1889 and cost $60 per acre, one-fourth payable in cash and the deferred payments drawing 7% interest. In 1890 the owner bought 1100 trees at a cost of $165. The next year he planted 700 more at a cost of $175. The first production from the trees was in 1894, and for that and subsequent years we give the result in the following table:

Year.	Pounds.	Cash Returns.
1894	1,100	$77 00
1895	12,000	476 00
1896	74,897	2,044 05
1897	76,000	2,280 00
1898	4,800	168 00
1899	116,000	3,480 00
1900	58,495	Unsold

There was an unusual cold snap late in the spring of 1898, which accounts for the very small crop of that year. The owner of this small farm is something of a novelty in the way of a farmer, having suffered the loss some years ago of both arms by the premature discharge of a cannon with which he was firing a salute at a political rally. Both hands and arms to the elbow were carried away, and he has since planted and managed the orchard above referred to. He says that during the years from the planting to the productive state the ground between the trees more than paid the cost of cultivation, pruning and irrigating by the root crops and pumpkins produced. Since the trees came into bearing they shade the ground so that no crops are produced between the rows. The cost of picking, curing and packing the fruit is from $11 to $13 per ton, where everything is hired. A large part of this work would usually be done by the farmer himself, but in this case the owner has hired all the work done. The cost of water for irrigating this twenty-acre farm has averaged $9 per year since the planting of the orchard. Now that it is in bearing it receives two thorough irrigations each year—one in February and one in May or June.

LOS ANGELES.

PUFFY ORANGES.—Los Angeles Herald: There is quite a little complaint this season among the growers in Monrovia and Duarte, and also in Azusa, about puffy oranges in this year's crop. What causes this defect is theoretical. Some claim it is caused by commercial fertilizer, while others claim it is on account of frequent fertilizing with stable manure. Manager J. P. Dunn of the Duarte-Monrovia Fruit Exchange, who has given many years to the study of citrus growing, attributes puffy oranges to the conditions of the season; that the rain we had a few weeks ago started the trees growing and the sap flowing, just at a period when the fruit was developed and commenced ripening. He does not believe that fertilizing has anything to do with the defect.

NAPA.

TWO YEARS FOR CHICKEN THIEVES.—Napa Register, Jan. 11: The preliminary examination of Peter Yordt and Bernhardt Struven, charged with burglary, held before Justice Palmer Tuesday afternoon, resulted in the justice holding both defendants to answer. They were taken before the Superior Court, where both pleaded guilty, and Judge Ham sentenced them to two years each in San Quentin. He told them that if they had stood trial and had been convicted he would have given them eight years apiece. The fowls which Yordt and Struven stole were fine, big, fat ones, but the two men have been made to pay for them most dearly.

SAN BERNARDINO.

IMPROVED CROP PROSPECTS.—Chino Valley Champion, Jan. 11: The rain of the first of the week was one of the most opportune, refreshing and valuable that this section has enjoyed for a long time. The barley especially was in a position to be benefited immensely by it. No doubt hundreds of acres of barley were saved by the timeliness of the rain, as the surface of the soil had been dried by the recent wind, and the young grain had not yet rooted deeply enough to find the lower moisture. Now all is wonderfully refreshed, and the ground so well soaked that occasional showers will insure a good crop of barley and beets. The rainfall for the storm was 2.11 inches, making the total for the season to date 12.69.

SANTA CLARA.

THE PRUNE ASSOCIATION.—Morgan Hill Times, Jan. 11: We have talked with a reliable party—one as largely interested in the prune industry as almost any other one in this part of the valley—and we are assured by him that the Association is all right. He went to San Jose and made personal investigation in his own interest. So fully was he convinced that it was all right, he assured us that, if he were not already a member, he would at once become one.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian, Jan. 10: Packers report that they have lost heavily on Red Pearmains—that there has been no market for them in carload lots.——The Eastern apple shipments for the past three weeks amounted to 37 cars, making a total for the season of 559 cars.——There has been a strong call for Missouri Pippins this year. Two or three years ago it was a slow seller. It has been of excellent quality this year and is keeping well.——It is estimated that there are yet in the valley about 40 cars of apples of all varieties for shipment, and that the shipping season will close about the middle of February.——Protect the robins. They are friends of the orchardist. There is a law against killing them. It cost a tree pruner of Santa Cruz $40 a short time ago because he killed two robins.——There is going to be a largely increased acreage in strawberries in Pajaro valley this year. San Francisco commission merchants who were not in on last year's combination of berry growers and handlers are preparing to be strictly in the berry business this year by backing farmers who own or can rent good berry land in this valley.——It is claimed that the practice of piling apples in orchards after picking, loose on the ground or in boxes, is largely responsible for poor keeping and early rotting. Orchard storage is common in this valley, and such exposure of picked fruit may be the cause for the complaints of poor keeping qualities which have been frequent during the past two seasons.

SAN LUIS OBISPO.

GROUND SQUIRREL'S CAPACITY FOR WHEAT.—San Miguel Messenger: H. Steele of Ranchita canyon has long been interested to know how much grain a squirrel is capable of carrying away in one mouthful, and a few days since his curiosity was satisfied when one of his grandchildren shot and killed one of these troublesome little posts while it was picking up wheat in the chicken yard. The squirrel's mouth was opened, the contents carefully taken out and counted, and, to Mr. Steele's surprise, he found there were just 495 grains. In carrying the dead animal across the yard some grain was dropped from its mouth, and, therefore, it is safe to say that a squirrel can carry 500 grains of wheat in its mouth at one time. At this rate, when the country is so overrun with squirrels as it is in this section, the loss to the farmers wrought by these little pests is very heavy.

SONOMA.

EXPERIMENTING WITH BEETS.—Sonoma County Index-Tribune: Sugar beet culture on the reclaimed marsh lands in the lower part of the Sonoma valley is only in its experimental stage, and is being watched with a great deal of interest by the owners of unreclaimed lands bordering on Sonoma creek and San Pablo bay. Should the venture prove a financial success, thousands upon thousands of acres of tule lands will be reclaimed and turned into beet farms.

A GOOD GRAPE.—Sonoma County Farmer: The Red Barbarossa is recommended by an experienced horticulturist as one of the very best table grapes for Sonoma county. It is an early bearer, ripening right after the Sweetwater, and is nearly as sweet and finely flavored as the Muscat of Alexandria. For this locality, our friend says that it has more good qualities than any other table grape he has seen. As it is not subject to mildew, it would be most excellent for an arbor.

BANNER HOP COUNTY.—Sebastopol Times: In 1900 the production of hops in Sonoma county was 15,000 bales, while the estimates for the first year of the twentieth century reach 21,000 bales. There were 6000 bales sold on contract last year, and of this quantity it is stated that contracts for 5500 bales are still in force for next year. Sonoma county holds the palm as the banner hop producing county of the State.

TEHAMA.

THE POPLAR DOOMED.—Red Bluff News: Of late quite a number of people have been cutting down the poplar trees in their yards and have done good work by so doing, for the poplar is about the poorest shade tree we have. They are surely what is called a "dirty" tree, for the leaves fall about nine months out of twelve. And again this tree is short lived. About the time it gets a good growth, the upper limbs begin to die and later the tree itself dies and then it is only fit for firewood and not very good for that. There are many other trees just as pretty and are much more satisfactory as shade trees.

TULARE.

WORMS KILLING HOGS.—Tulare News: Hogs have been dying of late around Milo, and the cause of their death was a mystery until one was cut open by Dick Childers, who reported that the intestines were being eaten by worms. A remedy has already been discovered and is being used with such results that the porkers are rapidly getting well. The remedy is very simple and consists of mixing bluestoned wheat and carbolic acid in proper quantities and feeding it to them.

SEEDLESS LEMONS.—Woodland Mail: T. B. Gibson has received from S. A. Allen of Lindsay, Tulare county, a sample of the seedless lemons produced on the trees in his orchard. The fruit is fine and large and attracted much attention during the Citrus Fair at Tulare. Mr. Gibson will send for some of the trees and give them a thorough trial in Yolo county.

NEVADA.

EXPERIMENTAL FEEDING OF STEERS.—Reno Gazette: Prof. McDowell of the Experiment Station farm has been feeding four steers since Feb. 3, 1900. This morning he sold them to the Western Meat Co. of Oakland at 4½ cents per pound, gross weight. The combined weight of the four head was 7269 pounds, and they brought $327.11, or over $81 per head. Two of them are 3½ years old and the other two are 2½ years old. They have been fed about thirty pounds hay per day since February.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid**, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O

THE HOME CIRCLE.

The Statue.

The marble waits, immaculate and rude;
Besido it stands the sculptor, lost in dreams.
With vague, chaotic forms his vision toems.
Fair shapes pursue him, only to elude
And mock his eager fancy. Lines of graco
And hoavenly beauty vanish, and, behold!
Out through the Parian luster, puro and cold,
Glares the wild horror of a devil's face.

The clay is ready for the modeling.
The marble waits: how beautiful, how pure,
That gleaming substanco, and it shall endure,
When dynasty and ompire, throne and king
Havo crumbled back to dust. Woll may you pause,
Oh, sculptor-artist! and, before that mute,
Unshapon surface, stand irresolute!
Awful, indeed, are Art's unchanging laws.

The thing you fashion out of sensoless clay,
Transformed to marblo shall outlive your fame;
And when no more is known your race, or name,
Men shall be moved by what you mold today.
We are all sculptors. By oach act and thought,
We form tho model. Time, the artisan,
Stands, with his chisel, fashioning tho Man,
And stroke by stroke tho masterpiece is wrought.

Angel or demon? Choose, and do not err!
For time but follows as you shape tho mold,
And finishes in marble, stern and cold,
That statuo of the soul, the charactor.
By wordless blessing, or by silent curse,
By act and motive,—so do you defino
The image which time copies, line by line,
For tho great gallery of the Universe.

—Ella Wheeler Wilcox, in January Success.

McShane's Mother.

When I look back and think of hor
My very heart-strings seom to stir;
How kind, how fair she was—how good
I cannot tell you. If I could
You, too, would love hor.
—Adelaido Proctor.

"Mother! Where did you get her?"

Maurice McShane was looking after the elfish little old ercature hobbling from the room.

"She was poor—and homeless. She wanted to work badly. So I told her she might stay."

"Stay! What earthly use will she be to you? Old? She's a feminine Methuselah! And stupid——"

"Deaf, dear!" Mrs. McShane corrected gently. "I think it is a common mistake to consider one stupid who is only so unfortunate as to be deaf."

"Well, there are grades of deafness. You'll have to buy a megaphone to give her orders. And ugly—phew! She looks like a galvanized corpse. Mother, you are too soft-hearted!"

"Every one," smiling back at the handsome young face opposite her, "can't be beautiful, dear!"

He took his coffee from her hand. "Like my mother!" he said.

"O, you flatterer!" she cried, but a girl might envy the soft rose bloom in her cheek, which deepened at sound of her son's praise.

"Simple truth," he declared, and looked at her admiringly.

McShane was proud of his mother. Her graceful figure, her sweet repose of manner, the quiet adequacy which she brought to the discharge of daily duties, her gentle consideration, her unaffected courtesy, possessed for him unfailing charm. He liked to think that she came naturally by her perfect self-poise—her air of exquisite distinction. Could she not trace her family back to the days when Henry II granted Arra to Theobald Fitzwalter after the Saxon invasion? And those fair hands of hers always brought to mind Meredith's description of those of Lucile de Nevers:

A hand,
White, delicate, dimpled, warm, languid and bland!

She had kept her youth wonderfully. The dark brown hair was still abundant and glossy. Her complexion was clear pink and white. Her teeth were perfect. Maurice thought looking at her that he had never seen eyes brighter nor more sympathetic. Sympathetic! That was the trouble. She was too sympathetic.

"Mother mine," he said "you will have to make a fight against the divine impulse of compassion. This house is becoming the refuge for all unhappy creatures—brute and human. Those dogs——"

"The poor things!" she cried, laughing. She had heard about the dogs before. "One could not stone them away, the first had a broken leg. The second was famishing."

"Maybe. Anyhow, they've adopted us. Then there are the stray cats whose preference for our residence enriches the milkman. Then, the cross-eyed orphan——"

"Maurice! You must not speak so of the poor child. No one else was willing to take her——"

"And now this deaf old hag! Well, willful woman will have her way!" He rose and sauntered to her side. "How I wish," he said, bending to kiss her good-by, "that you were out of mourning! I want to take you around with me to the theaters and clubs. Every one will suppose you are my sister. You're always being taken for my sister, you know. There are some men I want to introduce to you—Stanley Richmond for one. Not that one may steal you from me!"

It was his boyish jest to be jealous of attentions paid his pretty mother.

"I shall not marry again," she said, smiling up at him. You have no engagement for this evening? You will be home to dinner?"

"At 6 sharp. But I hope I shall find no more delightful additions to our household on my return!"

He laughed, blew her an airy kiss, and was gone. She sat gazing at the closed door—that tender smile still upon her face.

"My dear—dear boy!" she whispered.

They were close to each other—those two. The similarity of their tastes, the congeniality of their preferences, their years of intimate companionship—for she had never sent him away from her to school—had kept their affection for each other fresh, fragrant, and spontaneous. To those who had urged her to send her son among strangers she had replied much in the vein of the author of "Reveries of a Bachelor." For it was he who wrote: "Let the father or the mother think long before they send away their boy—before they break the home ties that make a web of infinite fineness and soft silken meshes around his heart * * * the sobs with which the adieux are said are sobs that may come back in the after years strong and steady and terrible!" Then their mutual keen sense of humor had added to the pleasure each found in the society of the other. So that it was with a shrinking at her heart for which she chided herself that of late McShane's mother heard frequent mention of one girl's name, noticed the eagerness with which certain invitations were accepted, and observed the dreaminess which came into her lad's eyes when shielded by unread paper or book.

One day he blurted his confession out in impetuous boyish fashion. She was young—of course. And beautiful—the lovliest girl in Chicago! Cultured, sweet, adorable—but alas, wealthy! So he might not speak yet—at least not until he had proved the stuff that was in him. So he talked on and on as only a young fellow in love will talk. For a girl keeps her secret deep hidden.

Neither paid any attention to the deaf old woman who was moving around the room, setting it in order. However, that happened to be one of her "good days," as she called those in which her hearing seemed less obstructed than usual. And a part of the conversation penetrated her consciousness.

"That's Leila's address," concluded the young fellow, springing up. "You will call on her and her mother, won't you?"

"Of course, dear—if you wish."

"You're a darling!" he decided and straightway flung off to take Leila to a studio tea. When he had left her at the door of her mother's home in the amber light of the autumn afternoon, he turned down the street, walked a block, and bumped into Jack Hall, an artist friend of his.

"Well met!" cried the latter. "Come with me. I'm going down to the Kankakee marshes to do some sketches for a magazine. It's a special order—good pay. Come along. It may be you can do some verses to go with the sketches. Don't say no! The trip will take the city smoke out of your lungs. You can wire your folks, can't you?"

"I suppose so, but——"

"We'll only be gone a day or two. Hallo, here's Harvey! How's this for luck? Harvey, you live next door to McShane's. Just drop in to-night, will you, and tell his mother that he has gone off on a brief sketching trip with me. Tell her I'll take good care of him. She trusts me, you know. I'll bring him back all right. There, that's settled. Thanks."

Now, it happened that the same afternoon a maid servant of the Mr. Harvey mentioned had cleaned a grown with gasoline. This gown she hung on the back of a chair near a gas range. When she lighted the range to prepare supper the gown ignited. So did the maid servant. The scene upon which Mr. Harvey returned was naturally an exciting one. So exciting, indeed, that it quite banished from his recollection the message he had promised to deliver to McShane's mother.

Mrs. McShane delayed dinner until it was uneatable. Stealing into Maurice's room at midnight to see if all was well, after the fashion of mothers, she was alarmed at finding him still absent. She lay sleepless until drawn, listening for his step. She came down to breakfast, all her pretty rosy bloom washed away by insomnia.

"I'm so worried, Rhoda," she said to a friend who chanced in. "Maurice did not come home last night. He never before failed to send me word of any change of plans. I am ill with anxiety. If he is not back by luncheon I shall send to inquire at the office of the paper and the Press club. It is just possible Miss Ware of Prairie avenue——What is it Debora?"

For the deaf old woman had paused before her and was intently watching the lips of the speaker.

"Nothing, ma'am, nothing!" She rattled off an apology in qucer foreign patois.

Leila Ware and her mother were lunching together in their South Side home when a servant appeared.

"There's a person," he said, "who insists upon seeing you." He hesitated. "She is excited, and is saying something about Mr. McShane.——"

"O, it must be that Mrs. McShane has called, mother!" cried the girl, rising. "Maurice said yesterday that she intended calling at once. Ask her into the drawing-room, Peters, and ——"

"McShane!" squealed a voice, "McShane!" A bent, brown, toothless, skinny little creature darted past the servant—confronted mother and daughter. They looked in astonishment at the witchlike woman. She was clad in dingy black. A torn veil was stretched over her long red nose. Her fingers were out of her gloves. She brandished a battered umbrella.

"His mother!" she cried—"Mr. McShane—his mother!"

A slow, painful color crept to Leila Ware's white brow. Maurice had seemed such a perfect gentleman—of such good blood and breeding!

"Mamma, she says she is Mr. McShane's mother." She went up to her—gently took the umbrella from her, and led her to the table. "Be seated."

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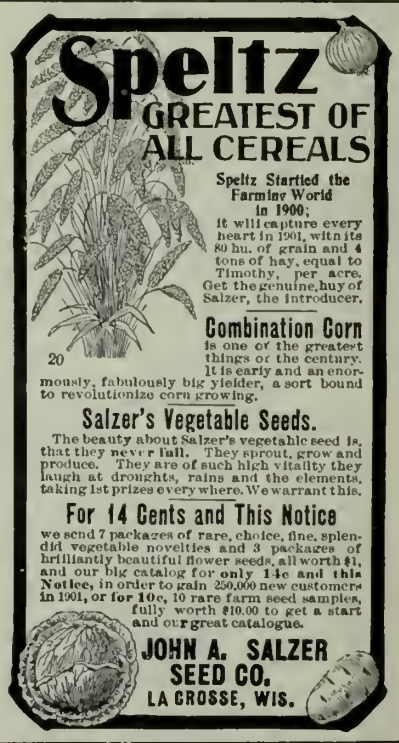

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she urged, although her heart was hot with mortification. "Mamma, will you give Mrs. McShane some tea?"

The old woman burst into a torrent of jargon in which the words "gone," "sick," "worried," were alone intelligible.

"Where he gone?" queried the extraordinary guest, in shrill conclusion. "Where Maurice gone?"

"We have not seen him since yesterday. We——"

"Eh?" She curved her hand over her ear. "Talk loud. I no hear!"

When the ladies had several times repeated in the highest pitch of voices they could assume that they knew nothing of the whereabouts of Mr. McShane, she seemed finally to understand that her errand was fruitless. She bounced up with a shriek of disappointment. She regained possession of her umbrella.

"Tell him come home!" she commanded fiercely. "His mother say come home!"

Then she was gone—running with a bent body like a hunter dog that scents game.

Mrs. Ware looked wildly at her daughter.

"His mother!" sobbed the girl. "It isn't possible! It isn't in nature! There must be some mistake!"

And she took herself off to her room in a passion of despair—and cried. There really was nothing else to do.

Meanwhile at the newspaper office and the Press club, the deaf little woman was causing amused discussion. Of course not every one misunderstood her identity. Perhaps of those who did not, Stanley Richmond was the most perplexed. A retired lawyer with literary leanings, he had listened to many a rhapsody from Maurice McShane on the subject of his lovely mother. So when in the course of her faithful peregrinations he met with the strange little creature who was making such a vigorous search for his boy friend, he was temporarily disconcerted, but not deceived. He insisted on taking her home. On the way he tried to evolve some reason from her spasmodic speech.

It was Mrs. McShane herself who opened the door to them—Mrs. McShane in a dusky soundless gown, with a filmy fichu crossed on her bosom and a handful of yellow autumnal blooms at her trim waist.

"Debora—where have you been? You went to look for Mr. Maurice—O, Debora! You should not have done that! You went—where? He will be so annoyed! He is well—almost well. And you went to the clubs—and the newspaper office—and to Mrs. Ware's! Why—because I was worried? You meant well, but——"

The little foreigner flashed by her—disappeared.

"How good of you to bring my poor maid home!" Mrs. McShane's blue eyes were looking gratefully at the bearded gentleman on the threshold.

"She is slightly deranged I fear, but faithful and affectionate. She knew I was worried about my son, and she did her best——"

"Her best!" groaned a voice from the parlor. "Mother, I should have staid several days with Jack Hall if it had not been for this beastly neuralgia. By that time she would have interviewed every acquaintance I have in the city! I told you your sin would find you out! Adopting homeless foreign females through charity——"

They heard him grumbling as he came across the hall. Why, hello, Richmond!" he cried heartly. "Where did you drop from?"

And when Stanely Richmond found himself seated in the cozy little library before a jolly grate fire, a handsome woman at one side of the hearth and a boisterous boy at the other, with the prospect of a delightful dinner immediately, he vowed gratitude to the quaint little creature who had been the means of bringing him to such a charming haven.

"Just as soon as the neuralgia started up I knew I could not stand it down in those deadly marshes," Maurice explained. So I turned around and came home. Good thing I did, too. The mater was sure I had been kidnapped. Besides I had promised Leila—Mother?" He leaped erect as the thought struck him. "Deafy speaks such ghastly English—is it possible—do you suppose that anywhere they may have fancied she was——"

"Your mother?" laughed Mrs. McShane. "It's possible."

Stanley Richmond covered his square chin and silvery mustache with one firm, sinewy hand.

"As soon as dinner is over—if you'll excuse me, Richmond——"

"Go, dear!" she said.

He went.

What Stanley Richmond said the day the young couple were married is not a matter of public record. Anyhow, he said it while the band was playing "Love's Young Dream." And those invited declared McShane's mother quite rivaled the bride in grace and beauty. But just what she replied to Richmond——. Well, the only thing one may positively declare is that poor, little, old, crooked, deaf Debora has a home for life with the Richmonds.—Chicago Tribune.

The Massing of Population is Ruinous.

The crowded condition of the more populous sections of large cities we have been accustomed to view with a measure of horror. The density of population in London, Paris, Berlin and other cities of the Old World is described in many voluminous treatises respecting the problems they present. But it is becoming apparent that we are in danger of like conditions in our American centers. I have just seen a chart showing that in New York there is an average of nearly nineteen persons to a dwelling. In Hoboken the average is between twelve and thirteen; in Fall River, from eleven to twelve; in Jersey City, Chicago and Boston, between eight and nine. This chart represents the census ten years ago, and when one takes into consideration the number of dwellings in which only two or three persons live the average is much larger and more serious. The problem has become almost universal, for, at the same time (thanks to modern improvement and rapid transit), more fortunate families are gravitating to the suburbs. The others, of course, less fortunate, have to remain in the crowded and ever-crowding sections. Manhattan's present average of dwellers to a dwelling is estimated to be twenty-three persons, which is simply ruinous from the standpoint of good health and sound morals.—Ballington Booth in January Success.

Real comfort for room wear is to be found in the soft fur slippers, wool lined. They can't be called really beautiful, except for the beauty of the fur, but they have charms of their own. They are to be found in all kinds of the shorter napped furs, sealskin, otter, and in the tiger skin the slippers are more shapely.

In a college town.—Student (to servant at the door): "Miss Brown?" Servant: "She's engaged." Student: "I know it. I'm what she's engaged to."

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DOMESTIC ECONOMY.

Domestic Hints.

Creamed Chicken.—One pint of cream sauce, one pint of cold chicken, cut into fine pieces, and highly season with salt, pepper and celery salt. For a variety add also one-half pint of raw oysters (small), and cook until oysters are frilled at the edges.

Sweet Potato and Chicken Croquettes.—Use left over bits of chicken, mince fine, mix well with washed sweet potato. If you have any gravy add enough to make the mixture moist. If not, add melted butter. Dip in egg and cracker crumbs. Fry in deep lard.

French Stuffing for Ducks.—Scald and wring a cup of dried crumbs out of stock or broth or milk. Chop a little fat bacon, mix it with equal quantities of parsley, chives, shallots half a clove of garlic, pepper and salt and a dozen stoned olives. Fill the ducks as with any other stuffing and sew them up.

Escalloped Sweet Potato with Oysters.—Boil six sweet potatoes, slice them the round way. Place a layer in a baking dish, sprinkle with salt and pepper, add small pieces of butter. Now add a layer of oysters and cracker crumbs, then sweet potatoes, etc., until the dish is full. Pour over this one teaspoonful of oyster liquor and bake about twenty minutes.

Hints to Housekeepers.

A thick felt under the table cloth avoids noise and saves wear on the cloth.

Use a double boiler for heating milk. It is scalded when the water in the lower pan boils.

In breaking eggs, break them one at a time into a cup, so that a bad one may be rejected.

Give the lamp burners a good boiling often for twenty minutes in water with a little washing soda.

Where brasses are much discolored an application of a solution of salt and vinegar is advisable before using the customary brass polish, as the work of polishing is much more quickly performed.

Ivory, it is said, can be made and kept white by washing it in soap and water and laying it while wet in the sunshine. This should be repeated if there are discolorings for several days. Ivory carvings should be scrubbed with a brush.

Handsome glass vases may be kept free from the accumulation of dust at the bottom by inserting a pad of tissue paper the color of the vase when it is not in use. By taking this means of keeping them clean the brilliancy of the glass is retained.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 16, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	Feb.	May.
Wednesday	—@—	82⅛@82⅜
Thursday	—@—	83⅛@82⅛
Friday	—@—	82½@81⅝
Saturday	—@—	81¾@82¼
Monday	—@—	82¾@81¾
Tuesday	—@—	81⅛@81½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	6s 2⅜d	6s 2⅝d
Thursday	6s 2⅝d	6s 2¾d
Friday	6s 2¼d	6s 2⅜d
Saturday	6s 2 d	6s 2⅛d
Monday	6s 2¼d	6s 2⅜d
Tuesday	6s 1⅝d	6s 1¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 05⅜@——	——@——
Friday	1 05⅛@1 05⅜	——@——
Saturday	——@——	1 09¼@——
Monday	1 05⅝@1 04⅞	1 09½@1 09⅛
Tuesday	1 04⅝@1 04½	——@——
Wednesday	1 04⅛@1 03⅝	1 08⅛@1 07⅞

WHEAT.

There was a very quiet market for wheat most of the week, both in spot offerings and futures. Several cargoes were cleared for Europe, but shippers did very little purchasing, using up their own reserves instead, with the evident intention of cutting down their holdings during the next four or five weeks to the lowest possible point, so as to avoid taxes. The injustice of taxing wheat in the present manner has been before commented on in these columns. Why the shipper should escape taxation because he sends his holdings afloat before the first Monday in March, and the farmer be compelled to pay taxes because he has not sold and is unable to send his wheat afloat, is a question we would like to have some of our wise lawmakers answer, but are satisfied of their inability to demonstrate the justice of the law in question. Either all the wheat should be taxed or none of it. A tax that can be legally evaded so easily by some and not by others is certainly not a just one. While wheat is not moving at present in satisfactory shape, it is not apt to be much worse during the balance of the season, and may be decidedly better. It is encouraging to know that coming crop could not well be more promising at this early date. The United States visible supply east of the Rockies is reported at 61,845,000 bushels, showing an increase for week of 584,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.05⅝@1.03⅝.

December, 1901, delivery, $1.09½@1.07⅞.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.04⅛@1.03⅝; December, 1901, $1.08½@1.07⅞.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	98¾	@1 00
Oregon Valley	97½	@1 00
Washington Blue Stem	1 00	@1 05
Washington Club	97½	@1 02½
Off qualities wheat	92½	@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s2½d@-s-d	6s5d@6s5½d
Freight rates	35@36¼s	38¾@40s
Local market	$0 95@98¾	$0 98¾@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on Dec. 1st and Jan. 1st:

Tons—	Dec. 1st.	Ja. 1st.
Wheat	185,887	*155,552
Barley	73,209	†50,271
Oats	5,532	4,465
Corn	84	760

*Including 106,776 tons at Port Costa, 48,115 tons at Stockton.

†Including 38,505, tons at Port Costa, 11,764 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 33,335 tons for the month of December. A year ago there were 219,989 tons wheat in Call Board warehouses.

FLOUR.

The market is quiet and devoid of new or any especially notoworthy feature. Business doing is at generally unchanged values, but there is no special firmness. Stocks are not particularly heavy, but are sufficiently large to admit of considerably more trade than is being experienced at present.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

Not much activity has been manifested the current week in the market for this cereal, nor has there been any special firmness observable, but values have been fairly well maintained at previously quoted range, and on desirable qualities it has been the exception where any special pressure to realize has been exerted. Spot offerings are not heavy, and with anything like active demand, firmness would speedily develop. The British ship Helensburgh, sailing Monday for United Kingdom, carried 55,231 centals barley, valued at $52,470. The British ship Pericles, sailing Tuesday for Europe, took 47,192 centals barley, value $42,100. Considerable barley has been lately forwarded to the Eastern States, both by sea and rail.

Feed, No. 1 to choice	75	@	77½
Feed, fair to good	70	@	72½
Brewing, No. 1 to choice	80	@	85
Chevalier, No. 1 to choice	97½	@1	02½
Chevalier, No. 2	85	@	90
Chevalier, poor	70	@	75

OATS.

While firmness continues to be a prominent feature of the oat market, it is more due to limited offerings and absence of selling pressure, than to active inquiry at the rates which have been lately prevailing. Immediate offerings are mainly colored descriptions, and these are receiving the most attention, prices for same being more reasonable than for white.

White Oats, fancy feed	1 40	@1	45
White, good to choice	1 32½	@1	37½
White, poor to fair	1 20	@1	27½
Gray, common to choice	1 20	@1	32½
Milling	1 42½	@1	45
Surprise, good to choice	1 40	@1	45
Black Russian	1 12½	@1	25
Red	1 15	@1	32½

CORN.

Market is fairly stocked with imported product, both Large Yellow and White, but there is little of any other description. Small Yellow is scarce and high. Prices for large corn remain quotably about as last noted, both Yellow and White going at practically the same figures.

Large White, good to choice	1 15	@1	17½
Large Yellow	1 15	@1	17½
Small Yellow	1 50	@—	
Eastern, in bulk (carload lots)	1 07½	@1	09

RYE.

There is no improvement to note. Offerings and demand are both light, with values unchanged.

Good to choice, new	87½	@	90

BUCKWHEAT.

Some recent transfers have been made at full current figures. The demand, however, is not active.

Good to choice	2 00	@2	10

BEANS.

Values remain in much the same position as noted in previous review, with supplies only moderate and principally of colored varieties. Owing to holdings being in comparatively few hands, and to the fact that there is no disposition shown to crowd offerings to sale, the market is tolerably firm at the figures quoted. The demand is slow, however, buyers not caring to stock up ahead to any noteworthy extent at the prices now ruling.

Pea, fair to good, 100 lbs	4 50	@4	75
Small White, good to choice	4 50	@4	65
Lady Washington	3 75	@3	90
Butter	4 00	@4	50
Pinks	2 20	@2	35
Bayos, good to choice	2 50	@2	75
Reds	3 00	@3	25
Red Kidney	4 00	@4	25
Limas, good to choice	5 50	@5	65
Black-eye Beans	2 75	@3	25
Horse Beans	1 75	@2	00
Garhanzos, large	2 00	@2	25
Garhanzos, small	1 25	@1	75

DRIED PEAS.

Choice Green are ruling fairly steady, but prospects are that any changes in the near future are more apt to be to easier than to firmer figures, as Eastern can be laid down for less than present price of domestic. Niles Peas are not receiving any attention from buyers at present.

Green Peas, California	2 60	@2	75
Niles Peas	1 85	@2	00

WOOL.

Inactivity is still the prominent feature in the wool market, both here and in the East. The quantities in warehouse are considerably in excess of a year ago, and there is much more wool held in the interior than there was at the beginning of 1900. This is ordinarily a dull period in the wool trade. That there will be a revival of business in the near future is confidently expected, but it is not so certain that the market will incline in sellers' favor, as manufacturers show no disposition to purchase beyond most pressing needs, except at greater bargains than are now presented.

SPRING.

Humboldt and Mendocino	16	@	17
Northern, free	14	@	15
Northern, defective	12	@	13
Middle Counties, free	14	@	15
Middle Counties, defective	11	@	13
Southern, 12 mos	8	@	10
Southern, free, 7 mos	9	@	11
Southern, defective, 7 mos	8	@	9
Oregon Valley, fine	17	@	18
Oregon Valley, coarse to medium	16	@	17
Eastern Oregon, choice	13	@	15
Eastern Oregon, fair to good	10	@	12
Nevada, as to condition	11	@	15

FALL.

Humboldt and Mendocino	11	@	13
Middle County	9	@	10
San Joaquin	7	@	9
San Joaquin Lambs	8	@	9

HOPS.

There is very little business doing, and prospects are for a quiet market during the balance of the season. Should there any special firmness develop later on, it would be more apt to result from unfavorable crop conditions than any other cause. Growers are now carrying very few hops, and there is little or no wholesale inquiry from any quarter.

Good to choice 1900 crop	13½	@	16

HAY AND STRAW.

The hay market is rather weak, with no very heavy quantities coming forward, but more buyers than put in an appearance could be accommodated. There is little other than local demand at prevailing rates. Straw is being offered quite sparingly, and values for the same are in consequence being well maintained.

Wheat	8 00	@12	50
Wheat and Oat	8 00	@11	50
Oat	7 00	@11	50
Barley	6 00	@ 9	50
Volunteer	5 00	@ 7	00
Alfalfa	8 00	@ 9	50
Stock	5 00	@ 7	00
Compressed	9 00	@13	00
Straw, ₱ bale	40	@	47½

MILLSTUFFS.

Most of the Bran on market was Oregon product, the same being principally under control of one receiver and was very steadily held. Business in Middlings and Shorts was not heavy, but was at generally unchanged values. Tendency of prices on Rolled Barley and Milled Corn was in favor of buyers.

Bran, ₱ ton	13 50	@14	00
Middlings	16 50	@19	00
Shorts, Oregon	14 00	@15	50
Barley, Rolled	16 50	@17	00
Cornmeal	25 50	@ —	
Cracked Corn	26 50	@ —	

SEEDS.

Alfalfa Seed is not offering in heavy quantity, but stocks have proven ample for the rather limited demand experienced thus far this season. Mustard Seed is virtually out of stock. Nothing new to note in Flaxseed. Business in bird seed is light and values without quotable change.

	Per ctl.
Mustard, Trieste	—@—
Mustard, Yellow	—@—
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag market is very quiet, importers and manufacturers preferring to have it so at this particular time, as it tends to give them better opportunity to regulate prices to their suiting later on. There is little doing just now in bags and bagging of any description and no changes to record in prices.

Calcutta Grain Bags, buyer June-July	6¼	@	6⅜
Calcutta Grain Bags, spot	6	@	6⅛
San Francisco Grain Bags, 22x36, spot	6	@—	
State Prison Bags in lots of 2000, ₱ 100	—@—		
Wool Sacks, 4 lbs	—@32½		
Wool Sacks, 3½ lbs	—@28½		
Fleece Twine	7½@—		
Gunnies	—@12½		
Bean Bags	4⅞@ 5¼		
Fruit Sacks, cotton	6½@ 7¼		

HIDES, PELTS AND TALLOW.

In the market for Hides and Pelts there is no improvement to note, the demand being slow and market lacking in firmness. Tallow is meeting with moderate custom at steady values, inquiry being largely on export account.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	9
Medium Steers, 48 to 56 lbs	9	8
Light Steers, under 48 lbs	8	7
Heavy Cow Hides, over 50 lbs	8½	7½
Light Cow Hides, under 50 lbs	8	7
Wet Salted Kip	9	8
Wet Salted Veal	9	8
Wet Salted Calf	10	9
Dry Hides	16	13½
Dry Kip and Veal, 11 to 16 lbs	15	13
Dry Calf, under 4 lbs	15@16	13@—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 50
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	75	@1 00
Pelts, medium, ₱ skin	60	@ 75
Pelts, short wool, ₱ skin	30	@ 50
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4	@ —
Tallow, No. 2	3	@ 3½
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

The honey market is without new development, and is expected to run during the balance of the season on practically the same lines as lately current. Stocks of all descriptions are light, as is also the demanp at current figures.

Extracted, White Liquid	7½	@	8
Extracted, Light Amber	6¾	@	7¼
Extracted, Amber	5½	@	6½
White Comb, 1 lb frames	13	@	14
Amber Comb	11½	@	12½
Dark Comb	8	@	9

BEESWAX.

Values are being well maintained, there being no lack of demand at prevailing values for all desirable qualities.

Good to choice, light, ₱ lb	26	@	28
Dark	24	@	25

LIVE STOCK AND MEATS.

Market continues strong for Beef, offerings at present being of very moderate volume. Mutton is not arriving freely and is bringing good prices. Lamb is meeting with a stiff market. Veal in prime to choice condition is selling to advantage. Hogs were not in heavy supply and commanded about same prices as last quoted.

Beef, first quality, dressed, net ₱ lb	8	@	8¼
Beef, second quality	7½	@	8
Beef, third quality	6½	@	7
Mutton—ewes, 9@9½c; wethers	9½	@	10
Hogs, hard grain fed, medium	5¾	@—	
Hogs, small, fat	5¾	@—	
Hogs, large, hard	5¾	@—	
Hogs, feeders	5	@	5¼
Hogs, country dressed	7½	@	8
Veal, small, ₱ lb	7	@	9
Veal, large, ₱ lb	8	@	8½
Lamb, yearlings, ₱ lb	10	@	11
Lamb, spring, ₱ lb	12½	@	15

POULTRY.

While market was not so strong as preceding week, it was more due, so far as choice young stock was concerned, to decreased demand from consumers at the stiff prices established, than to any material increase in supplies of poultry of this description. Arrivals of old fowls were heavier than previous week, the East contributing more freely. Turkeys were in only moderate supply, but not many were required to satisfy the immediate inquiry. Young Pigeons were in very light receipt and in good request.

Turkeys, live hens, ₱ lb	12½	@	13
Turkeys, live gobblers, ₱ lb	11	@	12
Turkeys, Dressed, per lb	14	@	15
Hens, California, ₱ dozen	4 00	@5	00
Roosters, old	3 50	@4	00
Roosters, young (full-grown)	4 50	@5	00
Fryers	4 50	@5	00
Broilers, large	3 50	@4	00
Broilers, small	2 50	@3	00
Ducks, old, ₱ dozen	4 00	@5	00
Ducks, young, ₱ dozen	5 00	@6	00
Geese, ₱ pair	1 75	@2	00
Goslings, ₱ pair	1 75	@2	00
Pigeons, old, ₱ dozen	1 00	@1	25
Pigeons, young	2 50	@2	75

BUTTER.

Further heavy cuts have been made in butter values, with stocks on the increase, and the market decidedly weak, especially for other than most select qualities. Held butter is still being offered freely and is taking the place of the more common grades of fresh, causing a glut of the latter, not only here, but in other distributing centers.

Creamery, extras, ₱ lb	20	@—	
Creamery, firsts	18	@—	
Creamery, seconds	17	@—	
Dairy, select	17	@18	
Dairy, firsts	15	@16	
Dairy, seconds	13	@14	
Dairy, soft and weedy	—	@—	
Mixed store	12	@13	
Creamery in tubs	17	@19	
Pickled Roll	18	@19	
Firkin, California, choice to select	17	@19	
Firkin, common to fair	16	@17	

CHEESE.

Prices are on a little lower plane than last quoted, but are still far above the parity of butter values. Market is not heavily stocked with either domestic or Eastern cheese, nor is it likely to be in the near future.

California, fancy flat, new	12	@—
California, good to choice	10½	@11½
California, fair to good	9½	@10½
California Cheddar	—	@—
California, "Young Americas"	10	@12

EGGS.

As is to be expected at this time of year, prices are on the down grade. Stocks are not particularly heavy, but with buyers and sellers both anticipating lower values, and operating accordingly, the market could not be otherwise than weak. Nothing short of a brisk shipping demand would bring about a reaction, but there are no surface indications to warrant anticipating any noteworthy orders from outside points at current figures.

California, select, large, white and fresh.	26	@—
California, select, irregular color & size.	24	@—
California, good to choice store	22½	@23
Eastern, as to section and grading	—	@—
Eastern, cold storage	20	@—

VEGETABLES.

Most kinds of both Winter and Spring vegetables have been in light stock and the general drift of values has been against buyers. Onions were more firmly held, with supplies in quite limited proportions and mostly in few and strong hands. Fresh vegetables from the South showed reduced receipt, as compared with a week or two preceding, but prices averaged lower than last quoted.

Beans, String, ℔ lb	8	@ 10
Beans, Wax, ℔ lb	8	@ 10
Beans, Lima, ℔ lb	—	@ —
Cabbage, choice garden, ℔ 100 lbs	1 00	@1 25
Cauliflower, ℔ dozen	50	@ —
Egg Plant, ℔ lb	10	@ 12½
Garlic, ℔ lb	3½	@ 4½
Mushrooms, Wild, ℔ lb	—	@ —
Mushrooms, Buttons, ℔ lb	—	@ —
Onions, Yellow Danver, ℔ cental	1 75	@2 10
Peas, Sweet, garden, ℔ lb	5	@ 7
Peppers, Green Chile, ℔ lb	4	@ 7
Squash and Pumpkin, ℔ ton	15 00	@20 00
Tomatoes, ℔ crate	1 25	@2 00

POTATOES.

Scarcely any change has been experienced in the potato market since date of last review. Strictly fancy, suited to the most particular local trade, were more readily sold than bought, and such commanded comparatively stiff figures. There was a surfeit of other descriptions, however, including liberal supplies of good qualities, and for all kinds other than strictly fancy the market inclined in favor of buyers. Sweets sold at slightly better rates than had been ruling, under lighter offerings.

Burbanks, River, ℔ cental	30	@ 60
Burbanks, Petaluma-Tomales	35	@ 60
Burbanks, Salinas, ℔ cental	85	@1 15
Burbanks, Oregon, lb cental	55	@ 90
Sweet Potatoes, Yellow, ℔ cental	75	@1 10

The Fruit Market.

FRESH FRUITS.

Apples are in very fair supply for this date, both California and Oregon, but only a small proportion can be termed choice to select. For fancy qualities of eating apples the market is firm, some extra select of most favorite varieties bringing in a small way more than quotations. For the ordinary run of cooking apples, however, the market is without special firmness, such stock being in sufficient supply for current requirements. Apples which were seriously defective dragged badly at low figures. Berries of any kind were not on market in sufficient quantity to warrant quotations.

Apples, fancy, 4-tier box	1 25	@ 1 50
Apples, good to choice, ℔ 50-lb box.	65	@ 1 00
Apples, common to fair, ℔ 50-lb box.	25	@ 50

DRIED FRUITS.

Dullness prevails throughout the entire market for cured and evaporated fruits, so far as wholesale trading is concerned, there being practically nothing doing in the way of transfers from first hands, and sales effected by jobbers are of slim proportions. The few orders being filled by jobbers are out of their own holdings, which are larger than required for the immediate insignificant demand. Owing to the stagnant condition of the market, quotations are about useless, and for the time being are based almost wholly on asking figures or the views of holders. Efforts to unload at present are a mere waste of time, nothing being accomplished thereby, except it be to further crowd down values and then have to wait for buyers. The market could not well be in worse shape for sellers than at this date. Some improvement in the spring months is confidently looked for. There may be no appreciable hardening in quotable values for most descriptions, but that there will be some wholesale movement may be regarded as certain as anything in the future can be. Apricots are in very light supply. No heavy quantities of Peaches are now offering from either first or second hands, and not much demand would be necessary to cause prices for this fruit to stiffen. Apples, Pears and Plums are in fairly liberal supply. Prunes are in heaviest stock and are offering at reduced rates for the large and small sizes, the basic price on 60-100's remaining as before. Quotations have been revised accordingly. For 20-30's 10c per pound is named, but this size is so scarce as to hardly admit of quotations.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6½	@ 7
Apricots, Royal, choice, in sacks, ℔ lb	7½	@ 8
Apricots, Royal, fancy	9	@—
Apricots, Moorpark	9½	@11½
Apples, in 50-lb boxes, rings, pressed, fancy	5¼	@ 5½
Apples, 50-lb boxes, rings, pressed, good to choice	3½	@ 4½
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	6	@ 6½
Peaches, unpeeled, choice	4½	@ 5
Peaches, peeled, in boxes	11	@14
Pears, unpeeled Bartletts, halved, fancy.	5	@ 6
Pears, halved, unpeeled Bartletts	3½	@ 4½
Pears, quartered, unpeeled Bartletts	3½	@ 4½
Plums, Black, pitted	4	@ 5
Plums, White and Red	5	@ 6
Prunes, Silver	4½	@ 6

COMMON SUN-DRIED.

Apples, sliced	2	@ 3
Apples, quartered	2	@ 3
Figs, Black	1½	@ 2½
Figs, White	2½	@ 3½
Peaches, unpeeled	3	@ 5

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼c.: 100-120s, 1½c. The selling price of Prunes for District No. 1 is ½c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

Nothing new to record in the Raisin market. The movement is exceedingly light, both outward and inward. Official rates remain without change

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—
(Usual advance for fractions.)		
Loose Muscatel, 4-crown standard, ℔ lb		—@ 7
Loose Muscatel, 3-crown		—@ 6½
Loose Muscatel, 2-crown standard		—@ 6
Loose Muscatel, seedless		—@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9¼c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Oranges were in fair receipt and met with a rather weak market, the demand proving slow most of the time since last review. Auction sales were mainly within range of $1.00@2.25 per box, as to quality, a few extra choice Navels going above latter figure. Lemons were held at much the same prices as last quoted, but the movement in this fruit was not active. Limes were steadily held, with supplies not particularly heavy.

Oranges—Navel, ℔ box	1 00	@2 25
Valencia, ℔ box	——	@——
Seedlings, ℔ box	50	@1 25
Tangerines, ℔ box	50	@1 25
Grape Fruit, ℔ box	1 25	@2 25
Lemons—California, select, ℔ box	2 25	@——
California, good to choice	1 50	@2 00
California, common to fair	75	@1 25
Limes—Mexican, ℔ box	4 50	@5 00
California, small box	50	@1 00

NUTS.

There are no large quantities of either Almonds or Walnuts now offering, and very little inquiry from any quarter. The light movement in stocks held by jobbers is at practically unchanged values, but the market cannot be termed firm.

California Almonds, shelled	22	@25
California Almonds, paper shell, ℔ lb	12	@13
California Almonds, soft shell	9	@11
California Almonds, hard shell	6	@ 7
Walnuts, White, soft shell	8½	@10½
Walnuts, White, California, standard	7½	@10
Chestnuts, California Italian	—	@—
Peanuts, California, fair to prime	4½	@ 5½
Peanuts, Eastern, hand-picked	5½	@ 6
Pine Nuts	5	@ 6

WINE.

The market shows healthy condition, with a very fair demand for desirable new wines, and no large quantities offering from any portion of the State. Values for dry wines of 1900 vintage remain quotable at 16@19c. per gallon for good to choice. Among recent transfers we note a sale of about 45,000 gallons at 18c. net, delivered at the station at Cordelia, Solano county, the wine being first-class. There has been a fairly liberal movement outward lately, both by sea and rail.

California Dried Fruit at New York.

NEW YORK, Jan. 16.—Evaporated apples, common, 3¾@4¾c; prime wire tray, 5@5½c; choice, 5½@6c; fancy, 6@7c.

California Dried Fruits.—Market quiet with an easy tone.

Prunes, 3¼@8½c..

Apricots, Royal, 7¾@12c; Moorpark, 10@15c.

Peaches, unpeeled, 6½@10c; peeled, 14@18c.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	143,929	3,591,740	3,052,900
Wheat, centals	188,694	3,688,225	2,505,271
Barley, centals	37,915	2,517,537	3,934,877
Oats, centals	3,565	458,396	569,128
Corn, centals	80	73,855	86,529
Rye, centals	1,235	98,062	84,505
Beans, sacks	8,342	474,542	288,028
Potatoes, sacks	29,447	942,446	732,564
Onions, sacks	1,926	130,459	121,206
Hay, tons	2,189	101,293	98,199
Wool, bales	10	22,169	35,314
Hops, bales	23	6,228	8,126

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	90,064	2,041,408	1,869,931
Wheat, centals	318,910	3,563,144	2,144,630
Barley, centals	26,895	1,493,450	3,183,910
Oats, centals	195	46,979	26,648
Corn, centals	206	2 269	10,322
Beans, sacks	1,096	9,523	18,071
Hay, bales	734	82 130	64,553
Wool, pounds	...	233,621	3,643,975
Hops, pounds	4,306	425,807	668,736
Honey, cases	...	1,632	3,238
Potatoes, packages	7,074	63,486	48,298

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THE VETERINARIAN.

Dipping to Stamp Out Texas Fever.

In a written report to the Santa Barbara County Board of Supervisors the county veterinarian, J. H. Hester, gives a good description of the process of dipping cattle for the purpose of eradicating Texas fever, as recorded by the Independent. The fever is carried by ticks, which dipping in a stated solution destroys. In his report Dr. Hester tells of visiting the dipping vats at Bakersfield and Ventura, the former owned by the Kern County Land Company, of which Mr. Hunter is the manager, and the latter on the ranches of Mr. Hobson. Continuing his report he says:

"Judging from what information I have been able to gather from the best authorities, dipping seems to be the most practicable and economical means for destroying the cattle tick, the carrier of Texas fever; and I believe by careful and systematic use of the same we can eradicate the disease from our county. Mr. Hunter estimates the cost of dipping at 2 to 5 cents per head, and from three to four dippings per year as sufficient to destroy all the ticks. His dipping vat is built of brick and cemented, which would cost about $400 exclusive of the heating apparatus. But the vats reported from Texas and Oklahoma are made with wood and can be built for about half the above price. It is also necessary to have some means of heating dip and keeping it warm. A warmth of 125° F. is recommended. Mr. Hobson and Mr. Hunter both use a strong tobacco dip in which they mix a small quantity of grease or crude petroleum."

Dr. Hester recommends vigorous measures to eradicate the disease from the ranges. All cattle coming into this country, where there is the least danger of them carrying the cattle tick, should be dipped before taken upon public roads or where they in any way expose other animals. Public dipping vats should be provided near the entrance of the railroad into the county but actual cost of dipping might be assessed to owners of stock, as it will be simply providing a means for them to comply with the statute forbidding any stock having a contagious or infectious disease being taken upon a public road.

These dipping vats could also be used in combatting the disease known as scab in sheep which prevails to a large extent in that section of the State.

Answers by Dr. Creely.

AN OUTBREAK OF HOG CHOLERA.

TO THE EDITOR:—I have fifty head of hogs and am afraid I will lose them all. I have lost five head already and many of them are sick now. I was inclined to think at first that the trouble was caused from the feed given, as all who have fed such feed have lost their hogs. I have been feeding swill from hotels. The hogs are taken first with a hacking cough, as though they had dust in their throats. They have snuffles and a small discharge at the nose. They tremble and seem weak, mope around for two or three days and die. Some seemed to be blind; one seemed to be lame in shoulder and leg as if it had rheumatism. I have stopped feeding swill and am feeding bran and alfalfa hay. The young hogs are running out now about two months old; they are the ones which have it the worst. I was told to feed sulphur and also copperas; and since feeding those, they have an awful diarrhœa—watery and black. They all had diarrhœa before I fed copperas and sulphur. They seem to have fever. One that died had parts of lungs black or dark-colored. One had inflammation of the bowels and another's small ontrails had blood streaks through them. What is the disease, and how should it be treated? How can I feed such feed to advantage? —ENQUIRER, Auburn.

The symptoms are not fully enough described, but the disease is hog cholera as far as I am able to make out from the letter. The only thing to do is to segregate suspicious cases, put the unaffected hogs in a perfectly fresh pasture and thoroughly disinfect the old pasture or pens. The moment any of the well herd show any symptoms of the disease, place them with the segregated hogs.

Mix one ounce of creoline with a pint of sweet oil and give one tablespoonful twice daily.

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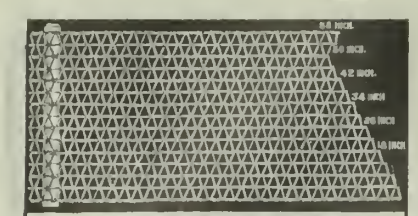

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Fully guaranteed. Best steel and galvanizing. If you can't find our local agent write to
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Patrons of Husbandry.

At Napa Grange.

TO THE EDITOR:—Napa Grange had the pleasure of a visit from the Worthy Master of the State Grange, G. W. Worthen of San Jose, last Saturday, the special occasion of his visit being the installing of the newly elected officers of Napa Grange. Those who witnessed the ceremony say that the installation as conducted by the Worthy Master was "out of sight."

The feast was spread upon two long tables. The attendance had been limited to the members of Napa Grange and their families and about seventy-five persons. After doing ample justice to the feast spread before them the assemblage had the pleasure of listening to an after-dinner talk by W. M. Worthen, in which he described a part of his experiences at the meeting of the National Grange last November in Washington, D. C., and told us how President McKinley expressed himself as being in full sympathy with the Order and that the Secretary of Agriculture sent for the Legislative Committee of the National Grange in order to confer with them in regard to the legislation desired by the Order. The Worthy Master then eloquently appealed to the members to loyally support our noble Order, and I feel assured that the members of Napa Grange were impressed with the fact that they have in our present Worthy Master of the State Grange a man worthy to fill any position in the Order, even that of Master of the National Grange.

The Grange reassembled at 2 P. M. in regular session, and after W. M. Worthen had explained to the members some of the fine points of the ritual, a resolution was introduced and unanimously adopted calling for a good selection for the secretaryship of the State Agricultural Society and a desire expressed that all subordinate Granges throughout the State take similar action.

J. S. TAYLOR,
Lec. Cal. State Grange.

Napa, Cal., Jan. 7, 1901.

Oakland Grange.

TO THE EDITOR:—There was a large attendance at I. O. O. F. Hall on Saturday, consisting of members of Eden and Oakland Granges, visiting Patrons and friends, to witness the joint installation of the two Granges.

The morning was spent in social intercourse, and at noon a fine Harvest Feast was served by the ladies, after which the officers were installed in a very impressive and able manner by Worthy State Master Worthen, which was followed by a fine musical programme and short speeches.

We were favored by having Bro. Houx of the Executive Committee and his wife with us. They are now residents of Berkeley, and we hope will soon be members of Oakland Grange.

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LARGE ENGLISH
Berkshire Hogs.
FOR SALE, Some Extra Pigs of Either Sex.
Sired by Romford Duke XXVIII, 36115, and out of daughters and granddaughters of Black Knight 30003, the World's Fair sweepstakes winner.
Romford Duke XXVIII, 36115, was sired by W. E Spicer's great show hog Enterprise 27957.
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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING JAN. 1, 1901.

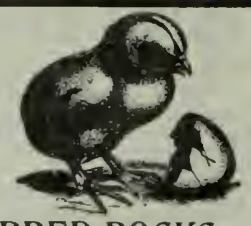
665,158.—BORING MACHINE — W. R. Abrams, Portland, Or.
664,921.—DRAFT EQUALIZER—J. W. Arehart, Harrisburg, Or.
665,361.—WEIGHING MACHINE — J. W. Berry, Tacoma, Wash.
665,169.—CAR VENTILATOR—L. H. Bowman, Walla Walla, Wash.
665,057.—WRITER'S COMPANION—J. D. Brower, Salem, Or.
665,172.—CURRY COMB—J. Carden, Gardena, Cal.
665,192.—HYDRAULIC VALVE—D. C. Demarest, Angels, Cal.
665,194.—IRON FASTENINGS—G. H. Dyer, S. F.
665,365.—FRUIT CLEANER—G. H. Ferguson, Redlands, Cal.
665,204,—STRAP LOCK—H. P. Gehricke, Los Angeles, Cal.
665,088.—CAN BODY MACHINE—J. Gould, Jr., Berkeley, Cal.
665,215.—WINDOW WASHER—B. S. Harris, Oakland, Cal.
665,346.—FILTER—R. C. Reed, S. F.
664,896.—COILING PLASTIC MATERIAL—R. Robertson, Santa Cruz, Cal.
664,902.—EARTH AUGER—Scott & Gerry, New Whatcom, Wash.
665,277.—BUTTER SCOOP—R. A. Simpson, Ferndale, Cal.
665,374.—TIMS LOCK—H. C. Stockwell, Los Angeles, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

APPARATUS FOR AGING WINES OR LIQUORS.—No. 664,538. Dec. 25, 1900. A. B. C. Dowdell, St. Helena, Cal. This invention consists of a vertical wooden tank having vertical tubes extending from top to bottom, and means including flanged plates fitted to the ends of the tube for forming close joints with the tank bottom. There is an exterior chamber within which the tank is contained, and means for heating and means for circulating the air through the tank, and within the chamber; also means for protecting the tubes against leakage when the wine is withdrawn from the tank, consisting of disks fitting over the bottoms of the tubes and screw rods extending upwardly, transverse bars at the tops, and nuts screwing upon the upper ends of the rods by which the closure plates at the bottom are drawn tight whereby tubes may be filled with liquid to prevent contraction.

BUTTER BOX.—No. 664,549. Dec. 25, 1900. J. K. C. Hobbs, San Francisco, Cal. This invention relates to an improved construction of boxes which are especially designed for the transportation of butter. It consists of a box, a cover therefor having a rim around its periphery and projecting downwardly, said rim and the upper edge of the box being formed with a rib-and-groove joint. Hinge plates are secured to the top of the cover and are bent downwardly over said rim and other hinge plates on the box are loosely connected with the first named plates in the plane of the outer sides of the box. Said box has a longitudinal groove in its front and a vertical groove or slot leads therefrom. The cover has a strap depending from its front edge and bent inwardly and adapted to enter the slot so that its bent end rests upon the bottom of the longitudinal groove. A bolt is slidable in the latter groove and is adapted to engage said bent end and lock the cover, and there is a means for retaining the bolt in its groove.



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Our birds are from the best of stock and have won highest prizes wherever shown.
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5 PURE BRED Percherons
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Price 25 cents, postage prepaid.

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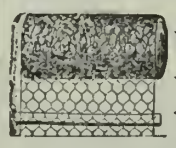
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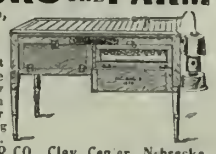
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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue and guide free. Agents Eclipse Aluminum Leg Bands and Rabbit Labels.

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S. P. LINDGREN & SONS, Kingsburg, Cal. For sale, Poland-China pigs from registered stock.

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Used Internally and Externally.

Two Sizes, 25c. and 50c. bottles.

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DON'T STAND the test of *use* and *abuse*, TRY OURS.
L. B. Robertson, Receiver.
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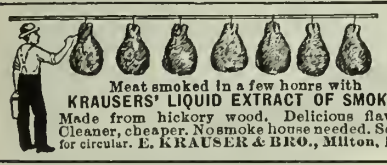

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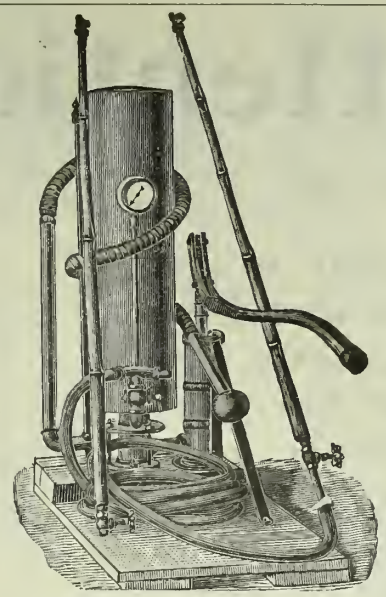

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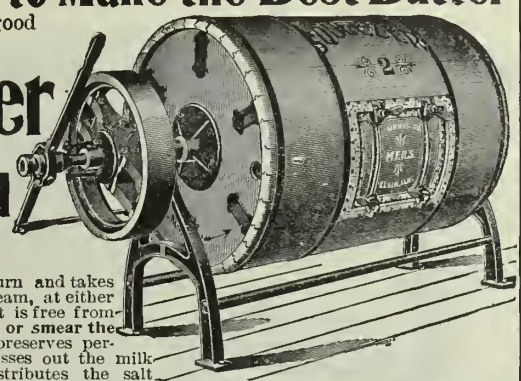

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The undersigned has in control one of the finest deposits of Gypsum in the State, and is prepared to supply in carload lots to any part of the coast. 85% PURE.
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Promptly, and at Reasonable Prices, and will continue the manufacture of
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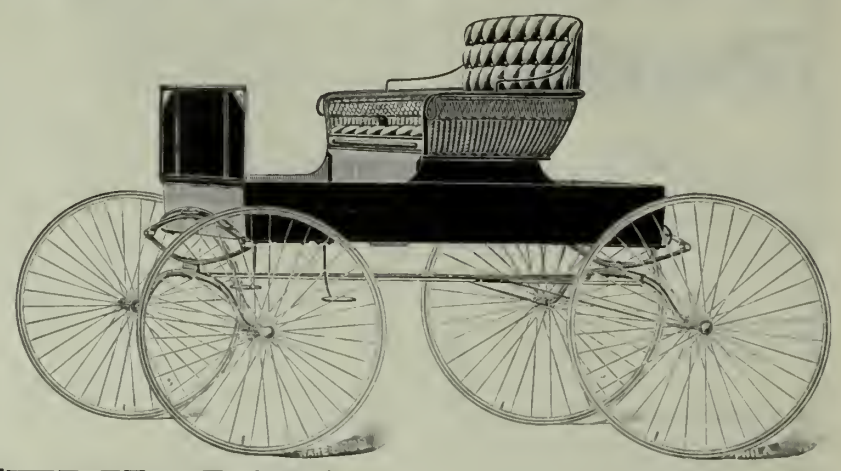

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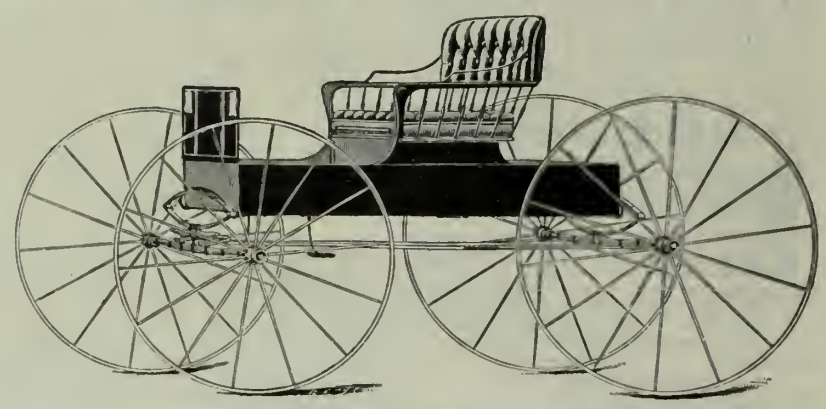

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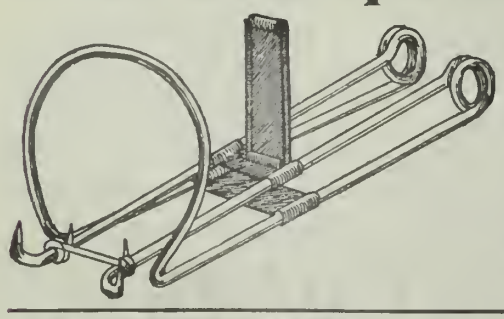

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GUARANTEED TO CATCH HIM WITHOUT FAIL.

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When you buy a Water Tank get one that will not dry out and shrink.

The Patent Non-Shrinking Water Tank.

The only one suitable for dry, hot climates.
COSTS NO MORE THAN COMMON.

SILOS and TANK WORK of every description.

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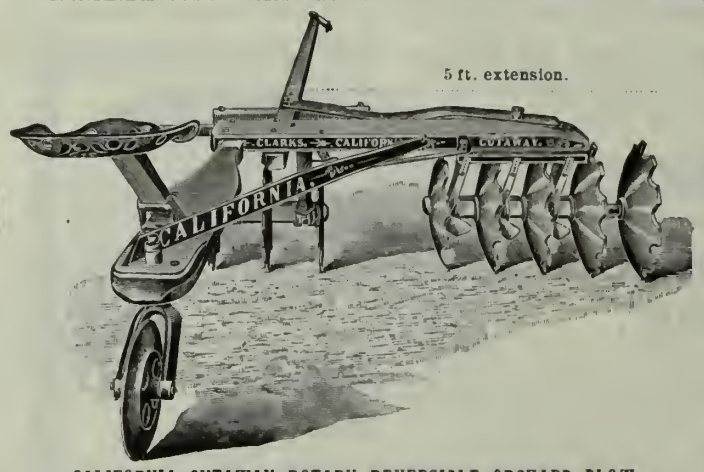

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100 Per Cent Better Work at One-Half the Cost.

CALIFORNIA CUTAWAY ROTARY REVERSIBLE ORCHARD PLOW.

DON'T worry. The California will take care of the WEEDS all right—kill 'em, BIG AND LITTLE—cut 'em to pieces and mix 'em with the soil. Land prepared with the California will NOT BAKE, CRACK AND DRY OUT. No lumps, no clods, land always level.

Use up-to-date orchard tools and you will make MONEY growing fruit. Write for catalogue, testimonials and price.

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COLT'S NEW NAVY, 38 & 41 CALIBRES.

Send 4 Cts. for Catalogue.

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(Successors to E. T. Allen Co.)

GUNS, AMMUNITION, FISHING TACKLE, ATHLETIC GOODS.

LARGEST STOCK. LOWEST PRICES.

$50.00 RANGE FOR $25.00

TO INTRODUCE OUR

TRIUMPH STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.

THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 4. SAN FRANCISCO, SATURDAY, JANUARY 26, 1901. THIRTIETH YEAR. Office, 330 Market St.

Mr. Burbank's New Creations.

We have on this page a bunch of new things from the wonder mill of Luther Burbank of Santa Rosa. They are only a few of the novelties which he makes public in his 1901 supplement to "New Creations," but they will suffice to show the reader that Mr. Burbank is starting the new century quite briskly and has many things left to keep it going along the line of horticultural surprises. There are new plums of course: if we are not mistaken, Mr. Burbank has enough strange things in plums to keep him at work a decade or more in proving them and making public the best of them. The new plum "First," which is shown on this page, is a second generation combination cross, as Mr. Burbank calls it, of Hawkeye, Hammer, Milton, Wyant, Wayland and Burbank, and is confidently introduced as the earliest of all plums, ripening at Santa Rosa June 15 or fully three weeks earlier than Red June or about a week ahead of the cherry plum. It is the largest and handsomest of very early plums, as the pictures may indicate. The tree has shown itself very productive. Mr. Burbank acknowledges that it is too soft and ripens too suddenly for shipment to distant markets, but its earliness, size and quality promise to make it win within the possibilities of its successful carriage. It is of pale amber color with a faint blush. The flesh is almost translucent, juicy, and good.

Combination.

Opulent.

First.

Another plum shown is the Combination. It is a very large, handsome, and early light-crimson plum, about as early as the Climax. It has been pronounced by a number of experts the best plum they ever tasted. The flesh is straw-yellow, very sweet, and said to have a dash of pineapple in its flavor. The stone is small and nearly free when ripe. The trees are said to be of exceptionally symmetrical growth and very hardy.

In the peach Opulent, Mr. Burbank offers a cross of the Muir-Wager peach and the white nectarine. He has had this combination in hand for ten years and this is the fruit of it. The skin is creamy white, slightly downy, and usually about half-covered with crimson dots and blushes. The flesh is light straw color throughout, fine texture, quite firm yet juicy, and has an excellent combination of the sweetness of the Muir with the vinous sprightliness of the nectarine. The stone is small and free. The Opulent ripens just before the Early Crawford and the tree is a strong grower. It is the first peach Mr. Burbank has offered and the best he has produced thus far.

The new apple Winterstein shows also the widening of Mr. Burbank's views. He has aimed to secure the incomparable flavor of the Gravenstein in a late apple and this he has secured in a Gravenstein seedling which ripens with the Baldwin and Rhode Island Greening several weeks after its parent. It is also a prolific bearer and strong grower, and the fruit has been highly praised by Eastern pomologists.

The foregoing are offered to the public for trial this year. Mr. Burbank publishes others which are still reserved for those who wish the whole stock of the kind. Very interesting in this class is the Improved Beach plum. What this came from is seen in the smallest cut on the page, a small, dull-colored, bitter fruit fit only to eat when cooked. The full size of the improved fruit is also given, and its bearing habit which makes the twigs look like a yard or two of grapes in the picture. The branch photographed was three and a half feet long. The improved fruit is deep purple dotted white, white bloom, and rich flavor free from the bitterness of its ancestor. This improved form is expected to carry the hardiness of the old one and to bloom very late and escape frost and all other ills which fruits are heirs to. We expect the whole stock will be captured by some Alaskan or Siberian capitalist for orchard purposes on the Yukon or the Lena.

Improved Beach Plum.

Natural Size.

Common Beach Plum.

Winterstein.

PACIFIC RURAL PRESS.

Office, Clark Building, No. 330 Market Street, San Francisco, Cal. Telephone, Davis 771.

TWO DOLLARS PER YEAR IN ADVANCE.
Advertising rates made known on application.

Registered at S. F. Postoffice as second-class mail matter.

E. J. WICKSON.....Horticultural Editor.

San Francisco, January 26, 1901.

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The Week.

It seems easy enough to rain this year. The winds just seem to take hold and the clouds to drop water without any particular effort. People are forgetting that they were anxious about rain and weather talk is becoming tiresome. We are getting an old-fashioned winter—plenty of water, plenty of growth, plenty of time to work, and everything else just about as good as we could make it ourselves. And so we give the floor to Director McAdie and Mr. Blochman, who will do the weather talking for this issue.

The great event of the world is the widely mourned death of Queen Victoria, who finished this week the longest reign in English history, and, so far as we remember, in any kind of modern history. The flags in San Francisco are largely half-masted in token of mourning and sympathy. Wherever the English language is spoken there will be popular tokens of regret—something more than the official manifestations, which will be made over a much wider area, no doubt. Victoria reigned nearly two-thirds of a century, beneficently and successfully, and has died full of years and honors. Edward VII is now King and the world is watching to see how the British empire will now address itself to the stirring issues of the new century.

Wheat is very slow. There was a speculative flurry on the basis of the plague in Argentine, but the proposition did not work very well. One cargo has cleared from this port. Prices are nominally unchanged; there is hardly enough doing to demonstrate a price. Barley is also slow, but is steadily held. Some barley is still going out. Oats are stiff, and fancy prices are paid for white oats for seed, milling and Government use. Though white oats lead, others are in sympathy and the whole line is stronger. Corn is unchanged, while rye is a little weaker. Bran is scarce and firm: some is going to Hawaii. Other feeds are firm. Hay is easy and slow; some is going south, and this, with the firm holding of dealers who have large supplies, keeps rates from falling. White beans are scarce and high. The Government is taking all in sight at high prices. Colored beans are rising, also. Beef and mutton are unchanged, but the consumption is being checked by high prices. Hogs are stiffer and a shade higher. Lamb is scarce and firm. Veal is various; too much young veal is arriving. Strictly fine butter is quite firm, but other is weak. Cheese is quiet and shading down, but supplies are not large. Eggs have improved considerably; bad weather seems to have checked receipts; no Eastern are now coming, and cold storage eggs are disappearing. These conditions are probably only temporary, however. Poultry is slow and weak, except for choice small stock. Potatoes are about the same; only fancy stock is strong. Onions are firm and show a rising tendency, though they have not advanced much yet. Citrus fruits are in good supply, but only fancy fruit is strong; the bulk is poor and easy. Lemons are slow. Dried fruits are still dull. There has been a little speculative inquiry for peaches, and they are about all that is moving. Some outside small prunes are going at Association prices, while outside large prunes are said to be cutting under. There is not much selling however, as buyers do not seem eager at all. The raisin association is said to be preparing to release the second grade fruit which they have been holding back. Almonds are unchanged and walnuts are moving again at old prices. Wool is flat; only small lots selling. Hops are also about lifeless, though 100 bales have gone to Australia by sailing vessel.

Sacramento is still the point at which most agricultural talking is done and is likely to remain so for several weeks to come. The convention of fruit growers, which was in progress as our last issue went to press, occupied most of two days and exploited most of the difficulties under which growers of shipping fruit now labor. All discussion of such matters is likely to result in some good, and in due time this occasion may bear fruit. Naturally, the most that could be done was to lay plans by which growers in their several localities might find a central avenue of activity and influence. But much can not be expected on any avenue unless the by-roads contribute their share, and so the central organization after all will become what the interest in the several localities make it. This remains to be developed. The convention at Sacramento formed an organization and appointed directors in various districts. These directors will endeavor to enlist local interest and support, and we bespeak for them the assistance of our readers everywhere. There is much to be gained by effective organization. Will it be achieved this time? We shall see. It can be easily killed; cold water will do it. We will find room next week for mention of the parties who will labor to accomplish the new organization.

New signs of activity in the sheep industry are found in the fact that enactments are proposed to secure clean sheep. It is a decade since such a thing was thought worth providing for. The proposition of Assemblyman Simpson of Fresno is that there shall be a system of State inspection of sheep, to eliminate contagious and infectious diseases. The office of State Sheep Inspector is created by the provisions of the bill, to be held ex-officio by the State Veterinarian. A deputy inspector for each county will be under his supervision. All of the sheep of every county must be inspected between February 1 and June 1 of each year, and the bill provides in great detail for the issuance of certificates where there is absence of disease and for the application of remedies where disease is found. This is all very desirable and in harmony with what all progressive sheep States and countries undertake. We shall have full details if the enactment carries.

The anticipated movement for a dairy school has taken the form of a bill by Assemblyman Myers of Kings county, who provides for the establishment of a dairy farm and school in Kings county, or in some other county of the great interior valley if Kings does not come to time. The bill empowers the regents of the University to select lands, under certain conditions, to receive donations of lands, etc. There is an appropriation of $20,000 for buildings and equipment. The idea of Mr. Myers is that the great dairy growth of the State is likely to be realized on the alfalfa lands of the interior valley, and therefore instruction should be localized there. Probably those interested in dairying in other regions may question that claim. So far as giving dairy instruction is concerned, it is feasible for the regents of the University to give it wherever the Legislature decides to have it; but it could be done for less money by having a dairy school at Berkeley. The people will have to decide through their representatives where the school shall be. The agricultural staff will do the best they can, according to the lands and funds which are made available.

President Wheeler made a strong plea for the University before the Legislature on Tuesday. He showed clearly its needs for more funds to meet the cost of maintenance with the vast increase of pupils which has come since the last Legislature assembled. He showed that California is securing a great university for less money than any other State, and that the process is causing hardship to both instructors and pupils. He made a home thrust upon the law makers when he said: "We educate the young at $134 a head. Stanford has $450 a head. We are educating on the cheapest basis. Give us the money and we will make the University great. The money will be forthcoming because men love the University. It is a part of them. Stanford has $2.50 to our $1. Will you permit one family to give more than all of you?" The obligations of the State to the institution, which has been built up to gratify the high aspiration and ambition of the commonwealth, is quite clear. They should be liberally met. During the last few years the University has come very near to the people in their lives and in their work, and there is a deeper and wider tide of generous support for it than ever before. If the Legislature desires to win the plaudits of the people, there should be no narrow views promoted on University advancement in California.

Another agricultural proposition which is pending at Sacramento is the proper provision for the State Agricultural Society. This organization has done much for the State in the exposition of its resources and products during the last few years. It has done vastly more and better work than it did a decade or more ago. It has had in its directorate men who have earnestly desired to promote industrial advancement, and it has been especially fortunate in its two last secretaries, E. F. Smith and P. J. Shields. They have done everything within the power of men to develop the industrial side, though the sporting elements naturally have tried to pull everything, which was not spiked down, to their side of the house. People who are disposed to talk about the State Agricultural Society in the same vein as they do of the gambling outfits which infest the bay region simply do not know whereof they speak. Perhaps the State Fair might be better if practical agriculturists generally did more for it, but as it is the expositions are of great industrial influence and value, and the State should deal generously with a society which has done, and proposes to do, so much to promote higher and more profitable agriculture.

One of the city papers, in reporting the speech of a well-informed man the other day, said that fifty-three million carloads of fruit were shipped out of the State last year. If this were true, it might explain why cars are now too scarce to carry the oranges to Eastern markets. The printer put too many ciphers in his line and made the shipment of fruit just one thousand times too great, and yet cars are scarce. A Los Angeles telegram says that with less than one hundred carloads of fruit going out of southern California since the holidays, there is a shortage of cars even at the present time, while the shippers now declare that, during the next fifty days, two hundred cars a day ought to be started for the East, as the condition and quantity of the fruit are such as to make desirable rapid movement. With this requirement for the shipment of about two hundred cars a day, the capacity of the two railroads is estimated at one hundred and fifty cars a day, with the cars all moving freely. That makes it look as though there were about twenty-five hundred carloads more of oranges in southern California that ought to be moved than the roads have capacity for. They are said to have in use a thousand cars more than last year. Evidently this citrus interest is getting very large.

At the Salt Lake live stock convention, to which we have alluded, there was a stock sale of much interest to our readers. The most important sale was by John Sparks of Reno, Nev., to M. K. Parsons of Salt Lake City, acting for himself and associates. Parsons buys the Nevada man's entire output of steers and heifers for the year 1900, estimated at 7500 head.

Owing to the lack of local cattle, California is going a long way for her beef. One thousand head are now en route from Mexico via El Paso for San Francisco.

QUERIES AND REPLIES.

Crude Oil or Distillate Spray.

To THE EDITOR:—Can crude (black) oil be used in the preparation of kerosene emulsion in place of pure kerosene? If so, can the emulsion be made up after the standard formula? Will the effect on the scales be as good as when kerosene is used? Is it used to any extent by growers in the State?—SUBSCRIBER, Alameda county.

A crude oil or distillate emulsion is being quite widely and satisfactorily used. It was brought to public notice by Mr. F. Kahles, manager of large lemon ranches at Santa Barbara, and is generally called by his name. Mr. G. P. Hall of San Diego, president of the State Association of County Horticultural Commissioners, finds it very effective and has widely commended it. The material used by Mr. Kahles is crude oil with the asphalt extracted, but all the other by-products left in. It is not the distillate which is used in engines. It is called distillate 28° The formula as given by Mr. Kahles is as follows:

Five gallons untreated 28° distillate.
Five gallons boiling hot water.
One and one-half pounds whale oil soap.

The whale oil soap must first be dissolved in water. Then add the dissolved soap to the distillate. It is important that the distillate be placed in the mixing vessel first, then place the dissolved soap on top. Then attach your spraying pump to the bottom of the vessel in which you are mixing the compound, and keep pumping it out of the vessel through the spray pump, back into the vessel, until the whole becomes of a rich, creamy substance. Keep pumping or churning it through the pump until it becomes a complete emulsion, without a speck of free oil in sight. When properly emulsified it should increase in volume about one-third from inclusion of air.

Only soft water should be used; hard water must be softened with washing soda. Then, when the emulsion is added to water, it becomes like milk; if not, the emulsion is not properly made and should not be used. If there should be free oil in the spray tank, stop spraying before it is drawn into the pump and pour it out before refilling. This is a very effective treatment for lecanium scales, like the black, brown apricot, etc. On deciduous trees it is used one part of emulsion to ten of water; on citrus trees, one part to twelve or fourteen. It is said that this spray is only about one-third the cost of the standard emulsion made with illuminating kerosene. It depends, of course, upon how you are situated to buy the asphalt-free crude oil.

The Elberta Peach.

To THE EDITOR:—I am thinking of planting a few Elberta peaches this season. There are no Elbertas in bearing in this immediate neighborhood, but quite a number of trees one and two years old which are fine, healthy trees, and the nurserymen seem to be pushing the sale. What we want here is a first-class drying peach. Please give me a description of the Elberta peach—the time of ripening as compared with the Muir, the general appearance and color at pit, also defects in bearing or fruit, if any.—H. R. SHAW, Selma.

The Elberta peach has many friends in this State. It is large and firm, high-colored, rich yellow flesh, red at the pit, which is very free. The tree is a strong grower and good bearer, large foliage, but very subject to curl leaf. The fruit ripens just ahead of the Muir. The red at the pit, and extending into the flesh, also the irregular form and considerable horn or projection at the apex, are against its acceptability to canners. The chief objection we have heard is against its form. The variety has had too short a life in the State to fully demonstrate its value and suitability. We shall be glad of facts tending toward such demonstration.

Imperial or French.

To THE EDITOR:—I intend planting ten acres to prunes this coming spring, in addition to what I now have. The information that I wish is this: Which is the better prune for the growers in the Santa Clara valley, the French or Imperial? There are advantages claimed for both. I consider this a most important question, as we do not care to make any more mistakes than can be helped.—ORCHARDIST.

Imperial is somewhat under disfavor because of the difficulty of handling so large a fruit ripening so late. Some are quite successful with it and have secured good prices for the product, but others have been grafting it over into Sugar prune to get an earlier ripening, very large fruit. The Imperial is a grand prune, and, where the fall climate favors, it will be valuable. The Sugar prune will, however—if all that now seems assured is realized—take the lead of the large prunes. As between the Imperial and the French, we should consider the latter safer for the coast valleys.

Valley Vegetable Growing.

To THE EDITOR:—About what time should one plant tomatoes, potatoes, beans, peas, sweet potatoes, watermelons and other squash-like vines, also celery, in the climate of Corning? What vegetables and about what time should they be planted in the fall?—READER, Corning.

What can be done with these vegetables in California is so large and varied that it is impossible to condense it into a paragraph. It takes a book to hold it, and that is the reason "California Vegetables in Field and Garden" is published by the PACIFIC RURAL PRESS. It covers the whole range of methods and seasons. It may be said, however, in a word, that, if you have irrigation, you can get a good crop of beans, potatoes and a long list of hardy vegetables like peas, onions, cabbage, lettuce, radish, etc., by planting in August, for they will either reach eating condition before frost, or will stand the light fall freezing. Beans are very tender, but they like the moderated heat of autumn in the interior valley, and, if they have moisture enough, bear well where they may fail in the heat of summer and make a good many beans before frosts cut them off. Without irrigation and with early fall rains, a long list of hardy vegetables can be planted for fall and winter growth, but if dependent upon rainfall, the planting of tomatoes, sweet potatoes and all the melon and squash family must be deferred until spring and after spring frosts are over. The same is true of corn, peppers, egg plant and other tender things. Celery can be planted in spring, also, for fall and winter use.

Peach on Prune.

To THE EDITOR:—Can I successfully graft peaches on prune trees fourteen years old? Some say yes and some say no—that the prune wood is too slow. I intend to put the graft about 6 feet from the ground where I can get limbs 2 inches or less in diameter. Most grafting done here is in large wood 3 or 4 feet from the ground.—GROWER, Winters.

The peach will take on the prune and it will usually overgrow the stock. The prune is slow for the peach, but an old prune tree if vigorous will push a peach graft for a time pretty well. It is good policy to work in wood of small diameter rather than large stumps because the wound heals over quickly and the joint is stronger, but working at 6 feet from the ground gives you a tree so high in the air that all picking, pruning, etc., is done at greater cost and when the price is low may make all the difference between profit and loss. We are inclined to think that if it is a large lot of trees we should prefer to clear the ground and plant new peach trees than graft over the prunes to peaches. If you care to try Sugar prunes the old trees would do better for that.

Overflowed Land for Fruit.

To THE EDITOR:—I want to plant apples on land which is overflowed. When the river rises very high the backwater stands on the land thirty and sometimes forty-eight hours in March. Some tell me that the trees would be liable to sour sap if the water comes on when they are beginning to grow and the weather is warm. What do you think of it?—READER, Santa Cruz county.

An overflow of short duration will not hurt fruit trees, providing the land is an open loam and the water flows away quickly. If the land is heavy and retentive, the water may stand in the soil a long time, even if the surface be soon cleared. This will injure almost any fruit trees, though the pear will stand a good deal of it. From what we know of your locality, we judge you have a heavy bottom to deal with, and we should not consider it a good place for apple trees. It could be improved by tile draining to a depth of 4 feet if you can find a good outflow for your drains. This would, however, be expensive, and we should try to find some land which is naturally better for fruit.

Eucalyptus Species.

To THE EDITOR:—We have made inquiry at two or three nurseries and they have ficifolia and viminalis, but I saw in one of your previous issues that viminalis is grown and sold as rostrata, but a very much inferior tree. Now I want the rostrata and ficifolia. Can you tell me where the trees mentioned can be procured true to name?—SUBSCRIBER, San Jose.

We said that years ago viminalis had been sold for rostrata. It is not likely that it is done now. Write to those advertising trees in our columns. The viminalis, though generally perhaps of less value than rostrata, is not a bad tree by any means. It is very hardy and to our notion a very handsome and desirable tree.

Grapes for British Columbia.

To THE EDITOR:—What grapes would be likely to prove satisfactory for home use to be planted against southern wall of house? The season is very dry from April to the last of September. The soil is chocolate loam, from 3 to 5 feet deep and well drained.—WM. C. GRANT, Gordon Head, B. C.

We presume it would hardly be worth while for you to try the European varieties, which are almost the only ones grown in this State. They are satisfactory here and there in eastern Washington and Idaho, perhaps, but we can not follow them farther north with our present information. The Eastern grape varieties, which are chiefly grown in the North Pacific coast regions, are Delaware, Concord, Moore's Early, Niagara and Worden. Any of these ought to serve your purpose.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 21, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature has been slightly above normal during the week. Light frosts have occurred in some places. There were light showers on Tuesday in portions of the valley, and general rain Sunday and this morning. Conditions have been favorable for farm work during most of the week, and considerable progress has been made in plowing and seeding. A large acreage of wheat and barley has been sown, and this will be increased if weather permits. Grain is looking well, though its growth has been retarded by cool weather. Feed is abundant and cattle are in good condition. No serious damage has been done by the recent severe frosts. Tree pruning is progressing.

COAST AND BAY SECTIONS.

The weather has been generally clear during the week, but with foggy mornings in some sections and occasional heavy frosts. Rain commenced Sunday morning and is falling to-day. Conditions have been very favorable for grain and grass, and both have made rapid growth. The early sown grain is in excellent condition and looking unusually strong. Plowing and seeding have been resumed in most places, and the grain acreage is being largely increased. Tree planting and pruning are in progress. Prospects continue good for large crops of all kinds. Frosts have not caused any material damage.

SAN JOAQUIN VALLEY.

The weather has been generally cool and foggy during the week, with light rain Sunday and to-day, and conditions have been favorable for all crops. Farm work has been resumed and much progress has been made in plowing and seeding. Tree pruning has also been resumed. Early sown grain is strong and thrifty and pasturage is abundant; both would be benefited by a few warm, clear days. Deciduous fruit trees have been greatly benefited by the cool weather and give indications of a heavy crop.

SOUTHERN CALIFORNIA.

Warm, clear weather has prevailed during most of the week, with occasional fogs in some places. Rain commenced Sunday, continuing at intervals during the day and night, and is falling to-day. It will prove very beneficial to all crops and especially to grain and grass. Early sown grain is in good condition, with indications of a fair yield. There will be a good crop of hay. Pasturage is good. Deciduous fruit trees are in good condition. Plowing and seeding are progressing.

As this bulletin goes to press, conditions continue favorable for showers in the southern part of the State. The present rain has fallen in such a way that there will be but little waste of water. There can now be but little doubt in the minds of farmers as to the scarcity of water.

EUREKA SUMMARY.—A few plows are running on high lands, but the soil is generally too wet for plowing.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Jan. 23, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.28	30 16	33 46	22 22	36	64
Red Bluff	1.44	15.13	14 83	13 76	38	64
Sa ramento	.96	11 32	13.81	10.42	34	58
San Francisco	1 41	13 01	14.28	12 46	46	58
Fresno	.18	7.21	6.13	4.69	36	66
Independence	.12	4.53	2 09	4 09	28	54
San Luis Obispo	.55	21.44	12 50	10.37	36	72
Los Angeles	.36	8 21	4 57	8 56	44	78
San Diego	.74	3.19	4.60	4.69	52	74
Yuma	.00	.02	.66	1 98	42	76

METEOROLOGICAL.

Rainfall in Southern California.

Written for the PACIFIC RURAL PRESS by L. E. BLOCHMAN.

After a long interval of dry weather we naturally look ominously toward the rainy season in southern California; a prejudicial forecast exists whenever December passes by as a rainless month. We never seem to recollect a dry December unless of a dry year; when, as a matter of fact, the fairly wet season of 1874–75 and the very wet season of 1875–76 of southern California had rainless Decembers. Heavy November rains fell in both seasons, with a long dry spell till some time in January. In Santa Barbara town the records show 6½ inches for November, 1875, with 7½ inches for the following January, and only a few sprinkles between in December of .30 inch.

In San Francisco nearly the normal rain fell in December, 1875, but nowhere south.

We cite these facts at the very outset of our discussion to disprove the dry December theory, and also to show how apparently erratic some rainy seasons are. We will state another fact: Observation in southern California since 1867—since records are available—shows that every heavy November rainy season has had the average rainfall, and most of the time more than the average fall.

Whenever, also, the rain as far south as Los Angeles exceeded that of San Francisco for any large rainstorm, as, for instance, in this last November, the season has never been a dry one.

THE INTERRELATION OF HIGH AND LOW BAROMETRICAL AREAS THE CAUSE OF RAIN OR THE LACK OF IT.—Why heavy November rains should imply a wet season we attribute to the difference of prevailing barometric conditions between average or wet seasons and the drier seasons.

To get a comprehensive understanding of the matter it will be necessary to consider conditions that bring rain to the southern coast and conditions that prevent it.

Instead of studying the presumed Japan current's erratic movements, which is a very vague and undemonstrable problem, we find that the movements of low and high barometer areas determine the rainfall; and that, furthermore, the study of high barometer areas is the most determining factor of the rainfall over the coast. The air above us is an ocean of high and low waves, which the barometer, so to say, has the faculty of recording for any particular locality. It is needless to state that these high and low barometers interact; that the movement of the low barometer, for instance, which usually in winter comes with the rain area, has its course determined by the position of surrounding higher barometrical areas. Weather maps show a movement of high barometer areas adown the Rockies, and a more or less steady high barometer in summer and winter off the central California coast. This high barometer off the coast has far more to do with our rainfall in central and southern California than that vaguely reputed Japan current; even the independent movement of high and low barometers adown the Rocky mountain region is of greater significance than the flow of an ocean stream.

The Japan current is a very vague stream when it strikes this coast; we can not at all definitely trace its whereabouts. But what we do know—what observation positively indicates—is that there are rain-bearing atmospheric areas (lows) striking in from off the ocean about opposite Vancouver, Washington or Oregon in winter, and some 700 to 1000 miles farther north in summer, and that below this belt there extends for over 1000 miles a more or less high barometer area, coming from the direction of the Hawaiian Pacific. This is the great rainless belt, moving northward in summer and back again southward in winter. Below this broad, rainless belt comes the tropical, more or less rainy belt off the Mexican coast. This also fluctuates north and south, according to the movement of the upper belt. Except for occasional deflected rains (Sonoras) along the southern border, we are entirely above its influence.

As said, the broad, high barometrical (rainless) belt controls our coast from about the central part of it to the southern end of Lower California. In winter, rains from the north break through and trend southward, but very soon the high asserts its domineering influence. Now what are the conditions that admit of these occasional rains on our California coast when we are in the arid belt? There are two essential factors, and a third one, also, which has not been sufficiently investigated, but which particularly refers to southern California. On the outset let us state that both high and low barometric areas from off the coast travel in a general easterly direction. It is only when they meet with some resistance or some overyielding atmospheric condition that they are deflected from this regular easterly tendency. Rain-bearing areas of different intensities on the northern low belt strike in off the Vancouver or Washington coast every few days in winter, usually trending easterly. But if a high barometer exists over the Rocky mountain region, the rain-bearing area meets with an obstacle and it is deflected out of its course, usually southward.

It may extend southward for only a short distance and then trend eastward, or it may trend farther southward but exhaust its rain-bearing energies before reaching southern California. The two necessary factors, therefore, for rains south are: A persistent high barometer adown the Rocky mountain or Eastern plateau system, and the simultaneous incoming of a sufficiently intense rain-bearing area off the coast. In the last November rains such conditions prevailed most pronouncedly. An extremely persistent high barometer existed over the Canadian and Montana Rockies—the concomitant of an early cold-wave north, 20° was recorded along the boundary line. At the same time, for five days, several storm areas (lows) entered off the Oregon and Washington coast, and they were immediately deflected south, affording comparatively little rain in Washington or Oregon. In the last two days' November rain the storm center extended as far south as San Francisco, precipitating its impetuous rain area mainly below the Tehachapi.

WHY CERTAIN SEASONS HAVE SUCH A LIGHT RAINFALL SOUTH.—Only occasionally are there such heavy rains south, and never in dry seasons, because high barometric conditions off the southern coast belt seem to repel the rain area.

This is the third factor referred to that has hardly been investigated. It is the factor that explains the abrupt variations in rainfall in certain seasons between even San Luis Obispo and Los Angeles, barely 200 miles apart on a bee line.

This season Los Angeles had as much rain from the November storm as San Luis Obispo; but in March, 1899, for instance, San Luis Obispo had over 6 inches from a rain storm from which Los Angeles had only 1.80—entirely out of the usual relative proportion of rainfalls. A very persistent high barometer prevailed off the coast all that year, which repelled the rainfall. For three successive seasons it has so prevailed, and this, we claim, is the main cause of the drought south. It was evidently first broken into last November, and this fact warranted us in predicting three weeks ago, in the Santa Barbara Independent, that there would be ample rains south this season.

This high barometer area reaches its extreme rainlessness in Lower California, and has a greater persistency or intensity in some years than in others. It has the effect of giving a prevalence of north winds for such seasons.

A FURTHER DISCUSSION OF THE COAST HIGH BAROMETER AREA.—To our observation, this persistent high barometer area in drier winters seems to be a continuation of the same summer high barometrical area, only that the low barometer area of the north prevents its upper land movement; instead, however, it passes across from the south central part of the California coast to Nevada, northern Utah and southern Idaho. This is its characteristic dry season location; the lows may impinge upon it occasionally, but it soon recovers itself. During long dry spells, as, for instance, this past December, it had a similar situation. But it is more characteristically set in both breadth and intensity in drier seasons. This occasions the more continuous and drier north winds of the dry seasons, and the disproportionate decrease of rainfall between the southern and central parts of the State.

High barometers precede and follow the lows off Vancouver or Washington. In summer they have a persistency, but in winter they never last any great length of time.

We do not for a moment forget the fact that there must be a high or resistent barometer over the Rockies to prevent the eastern movement of storms and thus force the storm area southward; but this in itself is not always adequate to deflect rain farther south, if the high hangs on too persistently off the southwestern coast.

Investigation of these highs may explain such relative discrepancies in some rainy seasons as exist between San Francisco and Los Angeles. In the season of 1890–91 21 inches rain fell in San Francisco, at the same time 15½ inches were recorded for Los Angeles, which is but a little over the relative average of the two localities. But in 1893–94, while 25½ inches rain fell in San Francisco, only 6¾ inches were recorded for Los Angeles. We have never noticed any explanation of these unusual discrepancies, which we attribute to the persistent high barometric area southward, and not to any Japan current movement theories. There are some seasons—such as 1850–51, 1863–64, 1876–77—where absence of rain in the central part of the State would indicate a higher movement of currents; but such are too exceptional to note.

Altogether there is a broad field for some future investigation that will explain many of these facts.

CONTRASTS BETWEEN SEASONS NORTH AND SOUTH.—As the monsoons of the Indian ocean affect the currents that cross over the Pacific—both water currents and air currents—these high and low barometer areas may be affected by them. At any rate, some relation seems to suggest itself in that the three years of drought in India, which was the effect of the aberrant monsoon movement, corresponded with the last three excessively light rainy seasons of southern California. The northern part of the State, and even Oregon, have seasons of heavier and lighter rainfall, but never such extremes as with us. One of the wettest seasons in Oregon was 1882–83—a partially dry one here. The wettest month Portland, Or., records is 20 inches in the December of 1882, when only 1 inch rain fell in Sacramento and $\frac{1}{10}$ of an inch in Santa Barbara, thus further illustrating how little our lower coast is domineered by the Japan current's atmosphere, or the low barometer area. On the other hand, our wet season in California of 1889–90 gave Oregon less than its average rainfall.

The last three years' precipitation, from April, 1897, to October, 1900, from the central part of the State southward, is absolutely the lightest rainfall of fifty years' record, and with the exception of 1828–30, there is no other period in the century to equal this light rainfall. It would now seem that the period of rain depression is over and that we may from now on anticipate the normal of other seasons.

This Pacific coast climatology affords a broad field for investigation, and, with the exception of daily forecasts, very little scientific data has been accumulated. We must, however, look to the study of the high barometer areas over the Rockies and on the Pacific to derive any tangible distant forecast data from out of these very few correlated facts.

Santa Maria, Jan. 6.

HORTICULTURE.

Hints on Grafting.

By E. A. CHEETHAM, at the Farmers' Institute at Winters.

It has been said to be unsatisfactory to graft old trees, trees eight or nine years old. Having had some experience in the care of grafted trees I venture some of my observations. Perhaps these things may be well known to many, but undoubtedly there are some to whom they will be useful.

In the first place, I should never graft a limb that was over 3 inches in diameter, for the reason that it would hardly heal over enough to make a good strong union.

SUCKERS.—Having had a tree grafted it is supposed by many that the proper thing to do is to wrap the tree and keep off suckers in order to give the scion as much chance as possible. It is undoubtedly proper to wrap the stump, but I question the propriety of keeping all the suckers off for the first season, for the reason that the tree having had the whole top cut off still has a full system of roots, and to narrow the producing area of these roots down to ten or twelve buds when it has been accustomed to an outlet of perhaps thousands, it will readily be seen that something must suffer; consequently many of the roots will be smothered and may become sickly and die, or take years to come back to healthy action.

If, on the other hand, the suckers are let alone they are put out as they are needed by the tree and pushed along until they afford relief to the tree and help it to recover from the shock of losing the old top, keeping all the roots in use and still having a reserve power to push along the scions as fast as could reasonably be expected. The suckers will shade the stump as well as break the wind from the grafts.

TREATMENT OF SCIONS.—Toward midsummer it is advisable and may be necessary to remove some of the rank growth, especially within 5 or 6 inches of the scions, as it may be seen that they are being robbed by this foliage. Later on if the lower shoots are making too much headway some of them should be broken about one-half off and left hanging to shade the stump, always being careful of winds and heading back the scions slightly to keep them from breaking off. The following year we will see the result of this care in the growth of the tree.

It is not a good plan to cut the growth of these scions half way down, as is sometimes done in heading back in summer. Neither is it advisable in winter in pruning grafted trees to cut back to 1 or 2 feet, as is customary with some growers. If the limb is where it is wanted, let it be, after shaping it, as it is necessary to do with any tree, and it will grow all the better for having plenty to start with. I should cut off very little.

THE WHOLE TOP OR NOT.—Then, about leaving one or two limbs when grafting to take up the sap. Bear in mind that the flow from one set of roots does not necessarily diffuse over the whole tree, but, all things being as usual, and nothing hindering, goes to a certain part of the tree, and does not readily change from that place. This can be proven in various ways—first, by the way the large and rank shoots start from just below where a large limb has been taken off. It may also be observed by tracing from the large and most vigorous roots, straight with the grain, to the largest and best limbs. By applying a strong bluestone solution to some cut portion of the roots in the summer growth of the tree, it will be seen that certain limbs in the tree die, the foliage drying up, while other limbs will be apparently as healthy as ever. Such being the case, it is apparent why we should not leave any of the old limbs.

Naturally, the cutting of many large limbs gives the tree a backset, and conditions must be favorable in order for it to recover. The flow of sap terminat-

ing at a limb cut off will at first send out good, strong shoots, and for a time do as well as other parts, but, not readily finding an outlet as formerly, will gradually be taken up by the superior drawing power of the large and well-established limbs left on, and consequently the later growth of the scions is not satisfactory. The tree practically abandons these stubs and goes on with thrift in the large and high limbs, dwarfing the grafts and making their foundation a fit place for sunburn and borers, from which they are fortunate indeed to recover.

Then, too, we have lost too much time in getting the stump healed over. I would cut off all limbs when grafting and give everything an equal chance. Having gotten one year's growth, the question is how to make a tree of it. It is necessary that these stubs should heal over in order to make it strong to hold the weight of fruit. To accomplish the desired result it is often necessary to take off all except three or four stubs. This will throw all the vigor into those remaining, causing them to heal over quickly, provided they have been kept alive all the way round.

To prevent the ravages of peach moth is a question of serious importance. I have seen the best results from spraying the stumps with lime, sulphur and salt in the spring, just before the new buds start.

It was not my intention in preparing this paper to attempt to exhaust the subject, and I have not tried to do so. Neither have I tried to amuse, but have simply and briefly mentioned a few things which appear on the surface, so to speak. If they are of benefit to any who are so unfortunate as to be obliged to change old trees, then I shall have accomplished the object I had in view in preparing this article. However, let me add that if these matters are left to the care and discretion of the average Japanese, we will have the same old story to tell of orchards ruined. It is certain that nothing short of constant care of the tree, together with vigilant watchfulness against the twin evils, sunburn and borers, is the price of success with old apricot and peach trees.

Pruning Prune Trees.

A San Jose prune grower gives the Mercury an outline of his convictions on pruning the prune. Not much pruning was done last year, with a result of small prunes all over the county. Last year less than 10% of the prune crop were 40s to 50s. The year before more than 40% were 40s to 50s, and under the same rule of pruning, showing plainly that it was not only the pruning that made the difference of the two crops, but was the nature of the climate at that period when the tree and bud were prepared to receive it.

I have learned by observation of prune trees that as they get old and too many main branches the inside branches do not have fruit spurs or laterals except on that part which extends over the tops of the other branches, where it can get the sun. Trees which have too many main branches do not bear as well as trees with just enough and properly thinned, and will have more inferior fruit on than the tree which is properly thinned, so as to allow the light and gases through the trees.

As to knowing when a tree is properly thinned, when you find the limbs covered from the stump to the top with spurs and laterals all around the limbs the tree is thin enough; but when only on the outside of the tree, then cut out the center limbs and let the sun get in and around all the remaining limbs, which means heavy pruning and is much needed in most of the orchards this year.

I notice many of our orchardists cutting all the outside limbs off, leaving only the inside limbs, which amounts to the same thing for the tree and quality of the prune, but delays the amount of crop a year or two, sometimes three. The reason for this is that the outside limbs are full of spurs and laterals on the outside of the tree, and none on the side facing the center. Cutting off the outside branches leaves nothing but center branches, without anything on them, only the tops. They will in a year or more spread out with the load on the top and begin then to get spurs and laterals inside, outside and all the way from stump to top. But why cut in that way? Take out the inside limbs, and you will have branches with nearly as many spurs and laterals as before, and only grow fruit wood on the inside of the tree for big crops, strong trees, big prunes and easily shaken off.

Fertilization is a great help to the tree, and is not destroyed by irrigation, as the water lowers the plant food down to the roots, leaving the surface prepared to receive more for the next watering.

FORESTRY.

The Eucalyptus in the San Joaquin.

From an essay by J. C. McCubbin at Reedley Farmers' Institute.

A lofty eucalyptus tree with its evergreen leaves will, perhaps, always have a specially inviting appearance to those of us who can look back to the time when these shimmering plains were relieved of their glaring brightness by those old gum trees that are still standing on the Clark & Kennedy ranch, which were then the only ones in the Alta country that could be seen at a distance. The Sanders grove, across the river, also offered its welcome to the weary traveler, and later on the Zumwalt grove, north of Traver (planted in 1885), began to attract attention, and to-day many different species of the eucalyptus family are to be seen in every direction.

Among the different varieties of eucalyptus grown in the Alta country, perhaps the most common are the eucalyptus globulus, or blue gum; eucalyptus rostrata, or red gum; eucalyptus robusta, or swamp mahogany, and eucalyptus rudis. But for both ornament and profit we find the red gum and the blue gum are preferred by those who have given the subject any special thought, and have had practical experience.

Red Gum.—We find that the blue gum will, as a rule, grow more nearly erect in this locality than the red gum (reports from the Santa Monica forestry substation to the contrary, notwithstanding), but the red gum seems to make a more rapid growth, while, at the same time, the quality of the wood is claimed to be superior to that of the blue gum, and observation goes to show that it is more workable.

A. E. McClanahan, living near Traver, has about sixty red gums, the oldest of which were planted in 1888. One particular tree forks near the ground and sends up two perfect trunks about 70 feet high. One of these trunks measures 4 feet 8 inches, while the other measures 5 feet 6 inches in circumference. One fine specimen set out in 1891 measures 5 feet in circumference and 80 feet in height.

Blue Gum.—The Zumwalt grove, 1 mile north of Traver, was carefully examined one day last week in company with the above named gentleman, and the following notes were taken:

The grove, containing about 2½ acres of blue gums, was planted in 1885, as a part of a timber culture claim, and now has about 800 trees to the acre which will average 8 inches in diameter and 60 feet in height, fairly straight, and generally found with but few limbs large enough for stove wood below 30 feet. The largest specimen measured 5 feet 10 inches in circumference and 75 feet in height.

Reds and Blues.—The writer has a small grove of red gums (with three or four blue gums as replants), growing 4 miles south of Reedley, which were planted late in the spring of 1889, and when nine and ten years old part of the trees were topped down, leaving the trunks 26 feet high; and where a tree forked near the ground one branch was taken away. Three or four had forked in this manner. This wood was cut into 14-inch lengths, making thirty-one cords of two tiers each, and all that could be spared was sold at $4 per cord, at the stump. Three trees had been grubbed when six years old to make room for the erection of a dwelling, and one tree blew down when seven years old, and three are yet untopped, all of which would have made perhaps five cords more, and the stumps of trunks left standing would make, at a conservative estimate, thirty cords, making a total of sixty-six cords grown on this tract, which allowing 18 feet for margin on two sides, covers less than three-eighths of an acre. Out of seventy-two trees planted I got a poor stand, which I attribute to late planting. Thus it will be seen that but little over one-half that number is used as a basis for this calculation. Had all lived that were planted perhaps one-third more wood could have been cut from the three-eighths of an acre, or a total of eighty-eight cords, which would be equivalent to about 235 cords per acre, which at $4 per cord would bring $940. Deducting $1.50 per cord for cutting ($352.50) leaves a net profit of $587.50 per acre.

This red gum wood, at the age of nine and ten years, has about 85% to 90% of the fuel value of mountain oak.

This grove being at the north end of a five-acre vineyard seems to have been a protection to the vines, as the vineyards in the immediate vicinity have been damaged by frost at different times, while this vineyard showed only an occasional vine nipped. This grove was irrigated and thoroughly cultivated about four seasons, or until the trees would shade the ground, since when no cultivating has been done, nor any water given the trees. They run from 30 inches to 6 feet 10 inches in circumference, and as far as can be told from their outside appearance, are perfectly sound at heart. But they have a fashion of growing most any way in preference to perfectly erect; however, their luxuriant growth of foliage and weeping nature of the lower boughs obscure this fault.

How It Grows.—A red gum near the above grove, but standing 40 feet from any other tree and about 60 feet from the main Alta canal, growing in light ash soil having no bedrock, where the water table rises at times within 8 to 10 feet of the surface, was planted by the writer at the same time as the main grove, which, by reference to his diary, is found to be April 4, 1899. At the time of planting, this tree was only 10 inches in height and the size of a knitting needle. It was irrigated about four seasons and has always been thoroughly cultivated. In August, 1896, it measured 5 feet 3 inches in circumference, or twice the circumference of the largest eucalyptus in the Santa Monica forestry sub-station at the same age. Nor did it stop growing then; but on Nov. 19, 1898, it measured 7 feet 3 inches in circumference and 63 feet in height, with a spread of 45 feet. On March 14, 1899, it measured 7 feet 8 inches in circumference, and in November of the same year 8 feet 5 inches; in November, 1900, 9 feet 2 inches. These measurements were taken at 2 feet above the ground. At that time it had reached a height of 86 feet with a spread of bough from north to south of 52 feet, and from east to west of 60 feet. This tree has a smooth, symmetrical trunk and a well proportioned top, which is rarely found in this species of eucalyptus.

More About the Red Gum.—The red gum has many good qualities which might be summed up as follows: It is of thrifty growth; will afford protection to near-by vines from frost; will not be gnawed by stock; will thrive on pretty strong alkali soil; splits fairly well when green; will sprout up when cut off, but never spread from the roots; makes excellent timber; is the best fuel we have for all seasons of the year; will burn well when only partially dry, because of its resinous nature; its bark, when shed, is sufficiently brittle to be broken up with the hands, and makes the best of kindling; the trees do not sap the ground any worse than other trees.

To make the best fuel it should be grown to be eight or ten years old before cutting.

The aroma is not offensive, yet claimed to be antiseptic, though not so highly recommended in this respect as the blue gum.

Culture.—The gum tree can not be considered extra good as a dooryard tree, on account of its shedding its leaves continually and its dense shade in winter. I have been unable to find any of the trees straight enough to make first-class piling. From our observation and experience, it appears that the trees should first be set about 10 feet apart each way, and when they begin to crowd they should be thinned out to 20 feet apart each way.

They seem to thrive best on sub-irrigated light ash soil; next best on slightly sandy soil, and poorest on red and adobe soils.

For Fuel.—T. M. Lane has a number of blue gum trees which he set out near his house in 1892, one of which measures full 6 feet in circumference. In 1895 he set out a row in front of his place, one of which measures 4 feet 4 inches in circumference. These trees have been recently topped, and the immense pile of stove wood from these tops may now be seen in the back yard. Mr. Lane feels quite sure that the trees afford protection from frost to his orange grove near by.

The trees heretofore referred to on the Clark & Kennedy ranch were set out by Mr. Robert Kennedy in 1872. The largest one now measures full 12 feet in circumference and 90 feet in height. It forks near the ground, sending up three large branches, measuring 3 feet 6 inches, 6 feet 1 inch and 6 feet 4 inches in circumference, respectively. These are blue gums.

A. Scaironi set out a row of blue gums along the north line of his ranch, near Dinuba, in 1892. Now one of them measures 4 feet 10 inches in circumference and 50 feet in height.

Lewis Eldred, living 4 miles south of town, has fifteen blue gum trees growing in a row which he set out in 1891. The largest one now measures 6 feet 3 inches in circumference. He topped these trees down to 18 feet this winter and has four and a half cords of very fine 16-inch stove wood nicely corded up to dry within easy reach of his kitchen door.

I have not had time to visit the Sanders grove and take measurements. There are also some very fine specimens around Reedley which I have not had an opportunity to examine. But I hope the foregoing will prove interesting and cause others to look up the matter of planting trees for beauty and utility, which are worth as much as a peach crop and require far less labor.

THE VINEYARD.

Vine Cuttings Which Failed.

To the Editor:—In your issue of Jan. 5 I find a question under the above heading, and I am not at all surprised that the cuttings failed, as they were set with a crossbar 2 to 2½ feet deep. It is surprising to me that any of them lived and made some growth under such treatment. During an experience of forty-five years in propagating vines from cuttings, commencing at the old practice of 18-inch cuttings and ending with 10-inch cuttings, I found to my full satisfaction that the 10-inch cuttings made the best plants, forming the main roots at the base of the cuttings and sending them straight down into the subsoil. A cutting, to callus well and form roots, needs warmth as well as moisture, both of which can be found at a depth of 10 inches; but take a cutting 24 inches long, and plant it with a crossbar at that depth—is there any surprise that it fails? If your correspondent will dig up some of the vines which survived this irrational treatment, he will find that the roots which kept them alive were formed at the upper joints, not below, in the cold, dry subsoil. How could the ground be packed with the crossbar at a depth of 24 inches? And yet, this is the first condition of successful planting. I thought that crossbar planting had been about abandoned in this State, and

that the spade had taken its place. If a cutting is kept moist and fresh while planting, set with the spade in well prepared ground, 10 inches below the surface, and the soil well pressed around its base with the foot, it will generally grow and thrive, as it finds all the elements for rooting—warmth and moisture. The roots it makes then will be strong and go down into the subsoil to draw sustenance from there. Whether those vines which survived the cruel treatment of your correspondent will ever make good, healthy and thrifty vines is a question I am unable to answer. They may make a new start next spring, but I believe a year's time has been lost.

Napa. GEORGE HUSMANN.

Resistants in the San Joaquin.

Phylloxera, the once mysterious disease which has devastated so many grape growing sections, will, says the Lodi Sentinel, find vineyardists in that neighborhood prepared to meet it when it arrives. While the disease has not yet made its appearance there, there is no good reason to believe that it will never attack the vineyards of northern San Joaquin. Around Stockton it is slowly closing in on the vineyards, and the insect causing the trouble may begin its deadly work here any time.

Indeed, so frightened are some of the grape growers south of town that they have besieged Mr. Sanguinetti, who has charge of the vineyard at the Eight Mile House, and whose Stockton vines are afflicted with this parasite, to use none of the tools, farming implements and boxes from the smitten vineyard at this place, which is still free from disease. This Sanguinetti has consented to do. Some growers say they will positively use no boxes but their own this year, realizing that they cannot take too many precautions in protecting their precious vines.

As to whether flooding will destroy this germ, it is said there is considerable doubt. A prominent grape grower states that to protect vines in this way it would be necessary to completely submerge them, and that for a considerable length of time. This, of course, is impossible.

Two vineyardists who will put out resistant vines in this neighborhood are M. E. Angier and W. O. Norton. Recently they visited Martinez to obtain information regarding the best plan from men who have made long, practical experiments with resistant stock. As a result they will set out 4000 cuttings this spring to root in a nursery, and next season will graft in the desired varieties, such as Tokay, Emperor and Ferrera. They will use Rupestris St. George as resistant stock. It seems to be the best all-around vine obtainable for the desired purpose, though much more difficult than some varieties to graft to table varieties than to wine stock.

These gentlemen will be pioneers in the local field of resistant vine experiment, and doubtless their move will be closely followed by many others who desire to be prepared for whatever may come.

The Cows Do Better Than the Mines.

California butter and other dairy products of the State in the period of one year have surpassed in value the output of California's gold mines in the year 1899, if there is no mistake in the official figures. State Mineralogist Cooper has reported the gold output of California in 1899 to have been worth $15,336,031. William Vanderbilt, secretary of the State Dairy Bureau, has reported to the Governor that the value of dairy products in the twelve months ending Oct. 1, 1900, was $15,493,272. On this showing, golden butter, cheese, etc., led gold just $157,241.

There are many figures in the Dairy Bureau's report. The period of two years is covered and the aggregate for the two is $28,770,897. There was a gain in the year 1899-1900 of $2,215,647 over the year 1898-99.

A MINE, the product of which is timber, is noteworthy. A mine of this sort is to be seen in Tongkin, China, where, in a formation of sand, at a depth of from 14 to 20 feet, a deposit of the stems of trees, which thousands of years ago must have existed as an extensive forest, but eventually became buried by an earthquake or other similar phenomenon, has been opened and is now being mined through gangways. The timber in no way forms any kind of coal, but is in good condition, a fact to be attributed to the large proportion of resin which it contains, and to the sandy nature of the ground in which it lies. The Chinese work the mine methodically, and use the timber for sculptural purposes, coffins, troughs, etc. The stems have a diameter of 3 feet, are 45 feet long, and appear to be a kind of fir.

THERE is a California law that corporations therein shall have monthly pay days for employes, but was held to be unconstitutional in the case of Johnson vs. Goodyear Mining Co., 127 Cal., page 4.

THE largest square that can be got out of a round piece of metal is found by multiplying the diameter by .7071. From a disc 1¼ inches diameter could be cut a square piece .8838 inch in diameter.

WHILE lightning may be seen and its illumination of clouds and mist recognized when even 200 miles distant, thunder is rarely audible more than 10 miles. The thunder from distant storms, therefore, seldom reaches the ear. The audibility of thunder depends not only on the initial intensity of the crash, but on the surroundings of the observer, even as in the quiet country one will observe feeble sounds that escape the ear in a noisy city. One curious and important condition of audibility is that the thunder wave of sound shall not be refracted or reflected by layers of warm and cold air between the observer and the lightning or by layers of wind, swift above and slow below, so as to entirely pass over or around the observer. Sound, in its wave-like progress obliquely through layers of air of different densities, is subject to refraction, and this refraction may occur at any time and place. Thus, observers at the topmast of a ship frequently hear fog whistles that are inaudible at sea level; those on hilltops hear thunder that cannot be heard in the valley; those in front of an obstacle hear sounds inaudible to those behind it. The rolling of thunder, like that of a distant cannonade, may be largely due to special reflections and refractions of sound. Again, the greater velocity of the air at considerable altitude above the ground distorts the sound wave and shortens the audibility to leeward, while increasing it to the windward.

A FEW MILES from Pittsburg, Pa., a well has been dug 5532 feet deep. Near Wheeling, W. Va., a well is 4920 feet deep. At Sperenberg, near Berlin, Germany, a hole in gypsum beds is 4559 feet deep. At Schladebach, near Leipsic, salt is taken from a well 6265 feet deep. The Red Jacket shaft of the Calumet & Hecla mine, in the Lake Superior copper district, is a mile deep, and men work in the shaft. Near by, the Tamarack mine has a shaft nearly as deep as the Red Jacket. At Paruschowitz, in Eastern Silesia, there is a well 6700 feet deep. They are still boring; it is the intention to go down 8800 feet. This last is now the deepest artificial hole in the world. At Lieth, near Altona, Germany, there is a hole 4388 feet deep; at Eu, near Strassfurt, is one 4241 feet; at Lubtheen, Mecklenburg, one 3949 feet; at Sennewitz, near Halle, 3644 feet has been reached; at Inowrazlaw, Posen, drills are working at 3624 feet; at Friedrichsane, near Aschersleben, a well is 3543 feet deep. At St. Louis, Mo., is a well 3843 feet deep. Many buildings in several parts of the world are heated with naturally warm well water; the hospital at Grenelle and large factories in Wurtemberg are examples.

A HOLE bored lengthwise through timber facilitates weather seasoning of green lumber, and northwestern lumbermen who have tried it say that it adds strength to the stick.

THE one billionth minute since the beginning of our present system of chronology will be reached at 10:40 A. M. April 30, 1902.

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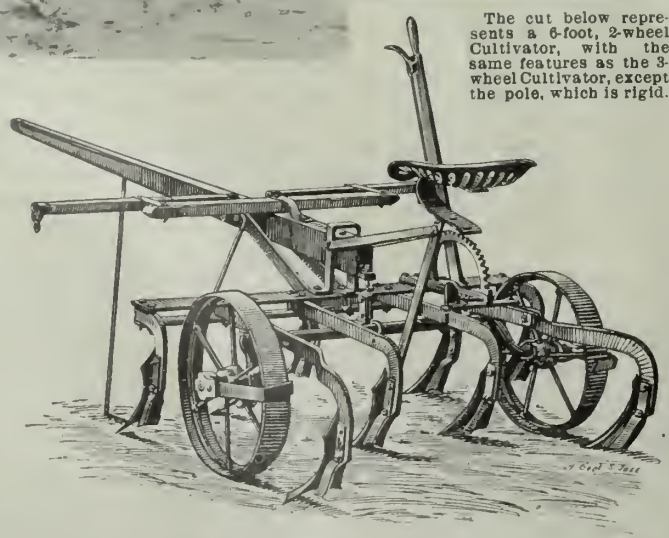

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Agricultural Review.

ALAMEDA.

OPPOSITION TO THE SALT TRUST.—Niles Herald, Jan. 18: A new company has been incorporated and is actively engaged in extending operations along the bay shore in this township. An officer of the corporation says: "The company at present is employing a big force of men at work erecting an extensive new plant near Alvarado, with a capacity for producing 40,000 tons of salt annually. A new $20,000 refinery is also being erected, which will turn out 100 tons of table salt per day. One great advantage which we have over the trust is in our convenient location with regard to the railroad. A survey for a side track to our works was made two years ago and the line will soon be built, as it can be constructed at very slight expense. Of the twenty-three salt makers and seven refineries which stretch up and down the marshes from Russels to Newark, none besides ours connect with the railroad without great expense for embankments and fills."

CALAVERAS.

IMPORTED PHEASANTS THRIVING.—Calaveras Prospect: The pheasants liberated in this county seem to be quite widely distributed and are now frequently reported from various parts of the county. During the fall and winter one has been seen often near Wheat's place on tho Valley Spring road.

COLUSA.

SOME CREAMERIES PAY.—Colusa Herald: L. G. Manor is making preparations to go into the creamery business on a larger scale in the spring. He is now milking thirty-four cows and cannot near supply the demand. Each churning is contracted for before the milk is placed in the separator. It is Mr. Manor's intention to enlarge his plant and increase his herd of dairy cows to ninety or a hundred head. He has an alfalfa field of 150 acres which furnishes the finest pasturage known to the dairyman. With plenty of alfalfa and a slight mixture of hay there is never any need of purchasing coloring material to produce that golden hue in butter so dear to the heart of the housewife.

BIG GRAIN PURCHASE.—Williams Farmer: D. Levy has purchased 25,000 bags of grain from the Stovall-Wilcoxson Co., also some 10,000 bags in the small lots from farmers in this vicinity. The Stovall-Wilcoxson wheat is part of the crop of 1899. It will take the force at the warehouse twenty days to load this wheat and nearly 100 cars to haul it to tide water.

EAGLES CARRYING OFF STOCK.—Colusa Sun, Jan. 16: Last Saturday George Johnson and Arthur Weast were hunting near the tules, when they saw a band of eight large eagles. They succeeded in killing three of the birds, one of which measured 7 feet 2 inches from tip to tip, and the other two measured about 7 feet. These eagles are becoming more numerous here than ever before, and have caused some complaint by carrying off lambs and young pigs.

CONTRA COSTA.

BIG LAND DEAL.—Antioch Ledger, Jan. 19: It is reported that the Bethel tract, east of this place, has been sold. It is on the mainland, very productive, and consists of 1451½ acres—800 acres belonging to F. O. Bethel and 451½ to his sister-in-law. The price paid is said to be $100,000. The new owners will put in a large pump and otherwise improve the place. The purchasers are San Francisco parties.

FRESNO.

COST OF PRUNING.—The expense of pruning the orchards and vineyards of Fresno county has been slightly reduced this season owing to the keen competition between the Japs and the Chinese for such jobs. An orchardist near Sanger employed a crew of Japs to prune his 20-acre peach orchard last month, paying them $1.10 per day for their services. The total cost of pruning the orchard was $60, or $3 per acre, the work being done to his entire satisfaction. One dollar per acre is being asked by the little brown men, who take contracts to prune the vineyards.

KINGS.

GRAIN LOOKING WELL. — Lemoore Leader, Jan. 19: T. W. Standart reports that the prospects for a big grain yield in the sinks of the Rosochina are most flattering. Himself and others have in some 8000 acres of grain, and seeding is still in progress at the rate of several hundred acres per day. Tho grain is being irrigated by the system of ditches of the West Side Consolidated Ditch Company, and the early sown grain has already attained a height of 6 inches.

MERCED.

A HERD OF FINE BULLS.—Merced Express: Superintendent Isaac Bird of the Nevada Bank ranch, received recently from the East, via the Santa Fe road, thirty-five registered Durham bulls. All but two of them are calves about six months old. Two of them are of the Bates milch strene and were purchased from the experimental station of the State of Iowa. The others are of the Cruickshank Durham beef strene, and came from Missouri and Illinois. They were purchased for the California Pastoral & Agricultural Association by John Gosling of Kansas City. Notwithstanding they were fourteen days on the road, they arrived in excellent condition.

NAPA.

RIPE CHERRIES IN JANUARY.—St. Helena Star, Jan. 11: Ripe cherries were on exhibition at the Grand Hotel Tuesday of this week from Bell Bros.' farm, above Edge Hill. Quite a crop will be gathered from that place in a few weeks.

BIG WINE DEAL.—Napa Register, Jan. 18: John Chaix and Mrs. A. Brun have sold the stock of their wine corporation to a San Francisco syndicate. The property consists of a vineyard on Howell mountain and the large winery at Oakville. The consideration is said to be $250,000 cash. Mr. Chaix will manage the business at Oakville for a term of years.

ROBINS DEVOURING OLIVES.—Napa Journal: Robins are a great pest in the olive orchards in this vicinity, and some of the orchardists are forced in self-defense to slaughter them in large numbers. In ono orchard no less than 500 were killed in one day recently and 200 in another day. The small boys are thus finding good shooting for their air-guns. The damage done by the birds is said to be very great. They swallow the small olives and pick holes in the large ones.

RIVERSIDE.

MELON TRUST IN THE DESERT.—Riverside Enterprise: A meeting of the residents of Indio and vicinity, for the purpose of discussing tho advisability of organizing a Melon Growers' Association, has been held. There were 165 acres pledged to the association, divided among fourteen melon growers. A good many not present will plant melons, so the decrease will probably be 200, if not more. Artesian wells are going down at the rate of two a week, and all are a success.

SAN BERNARDINO.

COTTON THRIVES FINELY.—San Bernardino Sun, Jan. 17: Several months ago Miss Millie Tittle—now Mrs. O. M. Stevenson—secured some cotton seed and planted it at her home on Second street. It grew and matured, and while all home products are likely to be considered better than a comparison would justify, this is said to be really fine cotton. Whether cotton could be grown as a commodity for the market is not at all demonstrated by this, but it does establish the fact that a fine quality of product can be developed from our soil and climate; whether profitably would have to be determined by experience.

SANTA CLARA.

NEW CANNERY AND FRUIT PACKING HOUSE.—San Jose Mercury, Jan. 17: At last Gilroy is to have a packing house and cannery, built by its own capital and fruit growers. The Prune City Packing Co. was organized there this week under the laws of South Dakota, which makes the stock non-assessable. The capital stock is $500,000, divided into 50,000 shares at $10 each. The directors the first three years are: P. H. Cordes, president; Geo. S. Tremaine, vice-president; H. R. Chesbro, treasurer; E. D. Crawford, secretary; H. M. Wolfe, manager. A tract of five and one-half acres has been purchased from Mrs. Peter Donnelly, adjoining the railroad, north of town. The object of the company is to handle fruit in large quantities in curing, packing and canning. A building 300 feet long will be erected about May 1st, so that work on curing and packing fruit will begin this summer. It is not intended to put in facilities for canning until next year, but the packing establishment will employ a large number of men and women. The company will secure terminal rates from the Southern Pacific Co. There is considerable capital back of the enterprise.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian, Jan. 17: The Eastern shipments of Pajaro valley apples during the past week amounted to 10 cars, bringing the season's total up to 569 cars.——The past strawberry season in Pajaro valley lasted 171 days, and during that period 350 cars were shipped from the Watsonville depot. About 176 chests were shipped in a car. ——In the orange growing counties wood fences are of the past. They were hiding places and hatcheries for tree pests, and they have been cleaned out. In this valley some division fences have been removed to permit of thorough cultivation of ground and to aid in fighting morning glory. Would it not be an improvement to follow the custom of the orange growing districts and clean out all wood fences as a blow to pests?

SAN DIEGO.

BEE KEEPERS MEET.—Escondido Advance: At a meeting of the local bee keepers, held at Escondido January 12th, R. B. Borden acted as chairman and Dorr Heffleman as secretary. The chairman stated the object of the meeting to be to learn the number of bee colonies, the product from which is tributary to this railway station, and thus be able to estimate the amount of bee supplies that will be needed. J. M. Hambaugh was made corresponding secretary, with instructions to obtain best prices for wholesale lots. That the further objects of the meeting may be attained, viz: That each member of the association—to be formed at next meeting, Feb. 16th—may thereafter be supplied at wholesale prices. At this first meeting there were but 922 colonies represented. Those present enumerated all bee keepers tributary to this point they could think of, and thus swelled the number to about 2900 colonies. Major Merriam said he believed the number would reach 4000. He further said he thought they ought to ascertain how much beeswax is on hand.

SAN JOAQUIN.

ALARMED ABOUT PHYLLOXERA. — Grape growers in the vicinity of Lodi are beginning to fear the encroachment of phylloxera and as a result have for the first time turned their attention to planting resistant stock. Some Stockton men who have vineyards in this neighborhood also, and whose Stockton vines are dying from this dread disease, have been appealed to by local growers to forbear using any tools or agricultural implements or fruit boxes in use at their afflicted vineyards, in the Lodi vine districts this year. This shows how badly frightened the local grape men are, and not without cause, as the affected vineyards are only a few milos away and the deadly parasite could easily bo transmitted.

SHASTA.

PRUNE WASTE AS HOG FOOD.—Redding Jan. 18: The prune growers of the Bolls Ferry district have discovered a way to utilize a hitherto wasted portion of their crop to make capital out of it. In the drying process part of the prune crop is ordinarily spoiled. A wideawake farmer has discovered that these prunes are excellent for fattening hogs. Many of the growers have provided themselves with droves of hogs and the waste of the recent prune crop is being fed to them. Hogs so fattened bring the highest price. Giles & Sons have sold 20,000 pounds at a single sale to a buyer who supplies a choice trade at Honolulu. Other heavyweights of the "prune hogs" have been sold to the same buyer and the lot will immediately be shipped to the Hawaiian capital.

SONOMA.

A BIG ASPARAGUS CROP.—Sebastopol Times: Walter Armstrong has five acres planted to Mammoth white asparagus on his ranch near Sebastopol. He cut only about 1000 pounds last year. This season he estimates that the crop will be worth at least $1000 if delivered to the cannery. The plant has to have the best of care to produce desirable "grass."

BIG STOCK SALE.—Petaluma Argus, Jan. 19: A big cattle sale between C. E. Barnhart and local stockmen was consummated this week. Mr. Barnhart bought forty-seven yearlings for $25.50 per head and twenty two-year-olds for $41 per head from the Hinshaw estate, 125 head of yearlings from Egan Bros., sixty-seven head from Caufield & Harris, and sixty head from H. J. Gwinn. The average price paid for the yearlings was $25, while most of the two-year-olds went for about $27.50. The two-year-olds in the main were culls.

SONOMA.

A WONDERFUL HORSE.—Santa Rosa Press-Democrat, Jan. 19: John F. Mulgrew, of Skaggs' Springs, has a horse which is regarded as a wonderful animal. The horse is twenty-one years old and has hauled the stage to the springs for the past seventeen years and bids fair to be on the line for a number of years to come. This animal has traveled in the regular stage trips, not including irregular trips, 64,260 miles. Many other horses have come and gone in the stage service since this one first started on the road.

SAN JOAQUIN.

A NEW ONION FOR CALIFORNIA.—Stockton Independent: For over nine months Major J. D. Peters has had an onion in his vault in his office, yet the onion is as firm as when it was received. It came from Alexandria, Egypt, and commands a high price in the East. Often from $40 to $50 per ton is paid for them, as they keep longor than any other variety. Major Peters gavo several to some Italians to secure seed, if possible, and the new variety of onion will be tried in this section.

SISKIYOU.

ON SNOW SHOES.—Yreka Journal: Several cattle herders have been traveling on snow shoes in the Kildore hills, east of Yreka, and in other localities, packing hay to stock until able to get them out of the snow. They travel along very easily with fifty pounds of hay, and go down the hills as fast as desirable in sliding over the snow. The snow shoe will be the means of saving a large number of stock that would otherwise perish, as no one could reach many head on the ranges in time without their use.

TEHAMA.

BIG PRICES FOR MUTTON.—Red Bluff News, Jan. 19: C. H. Johnson shipped 857 fine large wethers from this place to the slaughtering house in San Francisco Friday. The price paid was about the top notch, $5 per head. The sheep were bought from Grant Wilcox. He lately purchased 1000 head of two, three and four-year-olds at $4 per head from Hammans & Ashurst at Kirkwood, and 900 head from James Barry of Cottonwood, yearlings and two-year-olds shorn last fall, at $4.25 per head. About the highest price he has yet paid, he says, was a short time ago at Carson, when he bought 2000 head of lambs of last March and April, which averaged 103 pounds gross, the price paid, 4 cents per pound gross, making $4.12 per head. The lands were an excellent lot and were a cross from Shropshire bucks and Merino ewes.

TULARE.

ANTELOPE ORANGES.—Tulare County Times, Jan. 17: T. H. Davis has an orange grove in Antelope valley that is producing fine fruit this season. Samples of the fruit show limbs with small oranges and blossoms; also lemon twigs with ripe lemons and lemons of all sizes, the tip being covered with blossoms. This proves that the recent cold snap did not do any damage in Antelope valley and further proves that the citrus belt safely extends this far north.

FINE SAMPLE OF CITRUS FRUIT.—Merced Express: A magnificent orange 15 inches in circumference is on exhibition as a sample of the fruit of the Henry Rose orchard near Smith mountain, Tulare county.

GOOD PRICE FOR CATTLE. — Visalia Times: T. H. Davis of Antelope valley marketed some calves in this city that were from three to four months old, which brought him an average of $18 per head. He also sold some steers, less than two years old, that brought him $35 per head. Mr. Davis is a breeder of good stock, and says he prefers to sell his cattle when they are from eighteen to twenty-four months old. Ho thinks there is more money in Pole Angus cattle than any other breed, as they mature early and are heavy at the age he favors for marketing.

YOLO.

COYOTE BOUNTY. — Yolo Mail: The bounty offered by the supervisors of Yolo county for the killing of coyotes has been reduced from $5 to $2.50 and that for squirrels increased from 1¼ cents to 2½ cents. The action of the board was influenced to a great extent by the excessive amount of claims put in recently for bounty on coyote scalps and by the fact that the squirrel butchering business obviously needs encouragement. For the past several months the county has been paying an average of $75 per month for coyote scalps and the supervisors believe that as many scalps will be brought in at $2.50 each. There are other reasons too why the bounty was reduced. A few years ago the Wool Growers' Association offered $5 per coyote scalp. They subsequently reduced it to $2.50 per scalp and recently cut it again to $1.60. Another is that adjoining counties only give $2.50 bounty. The board reasons that if the wool growers do not want to encourage coyote extermination, they being the principal beneficiaries, it is only just that the county reduce proportionately the money expended in this direction.

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THE HOME CIRCLE.

Lament of the Fourth Class Postmaster.

I'd rather shovel sulphur down in Tophet
for a spell,
I'd rather tend a furnace in the southeast
end of—well,
I'm a deacon in the vestry class and
p'raps I'll stop at that,
But I'm pretty mighty tired of the job
that I am at.
I'm at work for Uncle Sam,
Lickin' stamps and sayin' dam—
Aging things about the bus'ness—I'll confess it, yes, I am,
For I hadn't no idee
What a pesky thing 'twould be
To run a country office so's to keep 'em
pleased with me.

The stage, you see, comes trundlin' in
'bout nine o'clock at night;
Then, so's to catch the early train, the
driver leaves 'fore light,
And so I have to sit and wait and go without my rest
To shift the mail that's coming east and
send it kitin' west.
And daytimes all the farmers round they
get as mad as sin
If any time they happen round and cannot find me in.
I calculate from what they say that ev'ry
critter feels
I ought to stay there days and nights and
go without my meals.
I cannot be a lark by day and be an owl
at night,
And blamed if I can take a stone and dull
my appetite,
For all the stuff a man would earn a-stayin' there a year
Would hardly fat a wad enough to stuff a
monkey's ear.

They think I read the postal cards—if
secrets trickle out;
They think that I'm the guilty one, and
flail me hot and stout,
And if a letter doesn't come as quick's
they think it ought
They intimate I've eaten it, with loud
and scornful snort.
And judging from the way they say,
"Now, won't you look again?"
And keep me nosin', peekin' round in that
office pen,
They think that I distribute mail with
eyes bunged up, or that
I cuff it up and fan it round that office
with a bat.

Oh, I want to dump the office. Oh, I'm
achin' to resign,
But there ain't a man will take it, and I
guess it's safely mine.
I was thinkin' I would drop it—shut 'er
up—get out—get rid—
I was askin' the inspector what would
happen if I did,
And he said they'd come and nab me,
lock me up and let me lie,
And quite prob'ly I would stay there till
my time arrived to die.
But I've just about concluded that I'd
rather stay in jail
Than be sassed and jawed and sworn at
by the folks who come for mail.
I'm at work for Uncle Sam,
And a man must be a lamb
For to run a fourth class office without
getting so's to dam—
Age his soul beyond repair,
For the things I have to bear
Are tough enough, by Judy, for to make
a deacon swear.

—Holman F. Day in Lewiston Journal.

The Son of a Doctor.

Miss Lane, head surgical nurse of the College of Physicians and Surgeons, stood alert by the side of the glass case of surgical instruments and held up a warning hand to her white-capped assistant, for old Dr. Newton had turned from the operating table and was speaking a little sharply. Young Dr. Tom Newton still bent over the motionless figure on the operating table in the hollow of the amphitheatre; for to young Dr. Newton, rising rapidly in fame as his great father had risen, was intrusted the life blood of the patient, from which the skilled hand of the surgeon was cutting disease and death. But the gray-haired man had paused in his work, and was saying something of evident importance to the eager young men of the graduating class of the College of Physicians and Surgeons, who sat in circling tiers above him. The earlier days of nervous fingering of pencils, pale faces, of white lips, were passed now, and the young men leaned forward eagerly to note the skill of the master hand that, down in the hollow beneath them, was disarming death with a glittering little knife. All save two of the young men; these had moved rather noisily to a door and passed out. At this, the keen-eyed old surgeon had straighteued himself with evident intent of speaking very gravely.

"Young gentlemen," he was saying, "two of your class are going to make very poor doctors, because they desire trivial things more than they desire the power of life and death. The Most High gives to a skilled surgeon more power than to any one man, and this responsibility rests heavily on each one of you. To many men the power of death has been given. To only a few is intrusted the power of life. Each of you here to-day has the right to be here for only one reason: You are here to learn to do a little of what the Great Physician did—to heal the sick."

Medical students are not conspicuous for their sobermindedness, but they are usually in earnest in their professional ambitions. While some stirred uneasily on the curved benches, they all gazed unwaveringly down at the gray-haired old man, who, white-aproned and bare-armed, stood stretching up to them a steady hand that held a stained scalpel.

"I have just noticed two of your class leaving this importaut lecture as carelessly as they will afterwards leave the bedside of their patients," went on old Dr. Newton. "Let me take advantage of this moment to impress on you one fact: To be a great physician, as each of you may be if you have only one patient, you must place professional duty above all things life can offer you. A patient must always be a sacred trust. The healing of the drunkard in the slums, if once you come to his bedside, must be to you as was the healing of Emperor Frederick to Sir Morril McKenzie. A patient is a person who has intrusted life itself to you, and the fulfillment of such a trust is the honor and manhood of a physician. The degree of manhood to which you will attain will be measured by the loyalty you show to the welfare of the patient whose cry for help you once answer.

The old doctor stopped abruptly and turned back to the operating table. So his eyes fell upon the bowed figure of his son, who had placed his ear close to the mouth of the unconscious man on the table, that he might better note the laboring breath. The stern expression passed from the face of the famous surgeon. Very proudly, very tenderly he looked at his son. His father having ceased talking, the young man glanced up and nodded to Nurse Lane, who stepped quickly to his side with a sponge and basin.

"Well, gentlemen," concluded the old fellow, more good-naturedly, we shall now proceed with this exceedingly important operation. Do not think me harsh with you. It is my pride that young men who are to be greater than we old fellows are standing by our sides to take the scalpel when at last our fingers tremble."

He glanced once more at his son and then bent beside him, while the murmur of relaxed tension spread around the amphitheatre. Nurse Lane and her assistant moved quickly about the two men, deft and alert. Dr. Newton was again the famous surgeon, operating with rare precision, lecturing curtly, and cutting the clutch of death from the inert body that lay motionless beneath his knife. So the operation came to an end. Attendants then led the patient back to the men's surgical ward, while the students scattered. The doctor and the doctor's son remained alone in the amphitheatre, the doctor's hand on his son's shoulder.

"That was good judgment of yours, Tom," said the great surgeon. "That operation will be a complete success. You were quite right about it. It is you who is going to be 'the great Newton.'"

"Not while you practice, sir," answered the young man, smilingly.

"That may not be much longer," said Dr. Newton, a little gravely. "I had a nip of that heart pain again this morning. I do not quite understand what it means."

"Why not consult Chapin, father?" said the young man, in quick concern. "You know you have often said Chapin was the best man alive on the heart."

"By and by! by and by!" said the surgeon, who was quite as bad a patient as are most doctors, great and small. "It is nothing yet if it is given prompt attention. Nitrite of amyl instantly before the blood pressure gets too high, that's all. Just a touch of angina pectoris, I fancy."

"I wish you would see Chapin, just the same," persisted young Dr. Newton anxiously.

They left the amphitheatre, and walked arm in arm through the hall of the hospital to the study they shared between them. When they had come to their study they found Dr. Somers, the noted surgeon, pacing nervously up and down the room.

"There's no use attempting that operation on the Sullivan woman, Dr. Newton," he began at once. "It would simply mean death on the table."

"Perhaps not," said Dr. Newton, aroused at once. Dr. Tom Newton listened quietly.

"The operation is too daring, the shock too great. I'll not risk it," insisted Doctor Somers. "The case is far too well known in the surgical world to risk failure. It might be different if it had not been discussed so much. A failure would bring severe censure on us both, and my own reputation is a thing I do not care to juggle with."

"Then she dies in her bed within a week," said Dr. Newton. "Dies without being given a chance for her life."

"I'll not risk my reputation, anyway, on such a slender chance as that," repeated Dr. Somers, beginning to walk about the study again.

"Somers," said the old surgeon, slowly, "with accuracy and swiftness that operation could be performed successfully. There must be no hesitation and no mistake, not a second's delay; that's all. You and I could do it."

"I do not think so," said Dr. Somers, almost irritably. "And the case is too carefully watched for me to take such a risk with my surgical reputation. I am a younger man than you, Dr. Newton."

"Very well, Somers," said the old surgeon. "I'll do it."

"But you must have a fellow surgeon in such an operation. Who is the other man that you can count on?" demanded Dr. Somers.

"Tom," said Dr. Newton, turning to his son.

"Certainly, sir," said young Dr. Newton.

"Oh, well I hadn't thought of that," assented Dr. Somers, wheeling abruptly in his nervous walk about the study. "If you are willing to risk your son's future, and he is rash enough to chance it, you couldn't have a better assistant. Good morning, gentlemen." He closed the door behind him softly, as do all doctors even when irritated, and was gone.

Old Dr. Newton smiled a little sardonically. "Somers is a good man, but nervous," he remarked. "He is too ambitious and it hurts him." Then he summoned an orderly and gave him some curt directions.

For an hour the gray head and the brown were bent over a paper, on which the famous surgeon drew diagrams. The old man talked with great earnestness, the young man listened. Now and then he asked a brief question. At last Nurse Lane tapped at the study door.

"The patient is ready in A, sir," she said, and turned away. Both men followed her down the hall.

"Remember, Tom," the old man said, "the life of a woman depends on our making no mistakes, and above all, no delay."

"Very well, sir," answered the young man, "there shall be no delay."

Turning aside from the hall, they entered one of the operating rooms, shutting the door behind them. It was a small room, strongly lighted and fitted with all the appliances of modern surgery. A glass case, full of glittering instruments and bandages and antiseptic preparations, was rolled close to the head of an operating table, and Nurse Lane, having assisted at the etherizing in another room, now stood with clasped hands and bare, white arms beside the case. On the table, motionless, but breathing with deep gasps, lay the heavy, bloated form of

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it may be for three.

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a slattern young Irish woman of the tenement house type. Under the influence of the anæsthetic her coarse features had become sodden and repulsive, as if she were very drunk. After a searching look at her the two doctors turned away, and talking in their usual tones, prepared for their battle with a malignant disease that, deep seated, was eating the life out of that body beneath the sheet.

"Now, Nurse, if you please," said old Dr. Newton, and they both stepped to the table. Nurse Lane swung open the door to the glass case, and handed them their instruments. Coolly, decisively, without the slightest hesitation, the operation that afterwards became so famous was begun. Not a sound was heard in the ether-drenched room save the swish of Nurse Lane's skirt as she stepped about the table, and the stentorian breathing of the woman on the table. On opposite sides of the high, narrow table, the doctor and the doctor's son fought with death in the citadels of life.

Dr. Tom Newton's slender fingers were swiftly adjusting a ligature about a severed artery, the woman's life being held between his thumb and finger, when old Dr. Newton tottered back from the operating table with an indistinct moan. His wrinkled face was ashen, and his mouth was working convulsively. Nurse Lane gave a startled glance at him and came swiftly around the table, but Tom Newton, his mind concentrated on doing quickly what had been intrusted to him, worked on, unnoticing.

"Nurse!" he said, sharply.

The old man swayed; his eyes were closed, and both hands were pressed to his heart. The scalpel slipped from his twitching fingers and fell to the floor with the musical tinkle of finely tempered steel. The son looked up, his fingers still closing the gaping artery.

"Father!" he gasped, and went suddenly white.

Through all his anguish, the tottering old man heard his son's voice. He steadied himself for a moment and his eyes flashed open.

"Now the cartilage knife, Tom!" he said, distinctly. "Separate the ribs. Be quick!" Then he crumpled up at his knees, lurched on to his face, and lay very quiet at his son's feet. The young doctor could hear no sign of the life that he loved so mightily.

For a moment of agony young Dr. Newton stood and hesitated. His face was staring and white, and bore a look of helpless terror, but his fingers still compressed the artery of the senseless lump of a woman that lay under his hand. Nurse Lane, head surgical nurse of the College of Physicians and Surgeons, looked wildly from the body lying on the floor to the young man standing above it, and could only wring her hands. The heart of the young surgeon was beating like a trip hammer, and the thunder of it was in his ears, but the nerves in the ends of his fingers were still the nerves of a surgeon, and he knew that the beating of his patient's life against his restraining pressure was getting fainter. His father lay dying at his feet for the want of the nitrite of amyl in the laboratory on the floor below, and the woman on the operating table would die if he deserted her for a moment. The operation must be completed swiftly and with marvellous skill to save her life, and he alone could complete it, now that the master hand was struck down. But his father was dying at his feet for lack of his son's help. Young Dr. Newton fought his fight for the space of three hoarse breaths from the woman who had intrusted her life to him. Then he acted.

"Come here, Nurse," he said, wheeling back to the table. Tie this ligature! Pass me that cartilage knife! Now the sponge! Steady, Nurse!"

So young Dr. Newton's famous operation was performed. As he worked with still, drawn face but unshaking fingers, the white-haired old doctor lay face down on the floor beside the table, one outstretched hand resting on the broken blade of a scalpel.

"Finish the bandaging, Nurse," the young man gasped at last. He stepped over his father's body, wrenched open the door, and sped down the hall. Nurse Lane, forcing back a sob, obeyed with the obedience of a trained nurse.

Hardly a minute later young Dr. Newton was back again, lifting his father's head tenderly, and forcing the lips and nostrils to a vial, from which came a pungent odor that rose above the languor of the ether. A moment later two other doctors were kneeling beside him, while a third was giving orders quietly to the nurses that were hovering round both of the unconscious figures, the one on the table, and the other on the floor.

"In a few seconds more he would have been quite dead," murmured Dr. Somers to Dr. Chapin, as they worked over the old surgeon.

"But he will pull through this time," said the great specialist, shortly.

Nurse Lane, leaning against the window, pressed her face to the cool glass and sobbed unrestrainedly, for even a head surgical nurse has nerves. Young Dr. Newton, still holding old Newton's head on his knee, stooped before two gray men of his grave profession, and kissed his father.

A Language Study.

To the Editor:—The study of the mother-tongue as spoken in our native country is now attracting considerable attention. When we remember that America is the largest area in the world in which the English language prevails, we see good reason why this subject should be one of interest as well as importance.

The farming population of a country makes up the great stable portion of the nation. In many ways it is the determining element, and a study of it and its ways throws light on the nation as a whole and its probable future. For this reason I have decided to urge the farmers of America to help in the attempt that is now being made to outline the chief dialect districts and to determine the relation of American dialects to those of the mother country. All that is necessary is a postal card and a few minutes' time. To secure general uniformity, the following directions may be given:

Write on the postal card lengthwise, as the print runs on the other side, the answers to the following questions:

1. Name your town (or township), county and State.

Do most people in your neighborhood say:

2. "Get a pail of water," or "Get a bucket of water."
3. "Fry it in the spider," or "pan," or "skillet."
4. Does the "o" of "hog" resemble "a" in "ha" or in "haw?"
5. Does the "o" of "on" resemble "a" in "ah" or in "awe?"
6. Spell as best you can the word or sound used in calling cows from pasture. (This number is particularly important.)
7. Your name.

The following are reports that have come in recently and may serve as models:

1. Freehold, Monmouth Co., New Jersey.
2. Pail.
3. Spider or pan.
4. Ha!
5. Ah!
6. Ko-ish or ko-baugh.
7. John Enright.

1. Harmans, Ann Arundel Co., Maryland.
2. Bucket.
3. Skillet.
4. Ha!
5. Awe.
6. Co-anch.
7. Lemuel G. Kelbaugh.

1. Scranton, Jackson Co., Miss.
2. Bucket.
3. Skillet.
4. Haw.
5. Awe.
6. Sook.
7. Edgar Hull.

1. Newark, Kendall Co., Ill.
2. Pail.
3. Spider.
4. Ha!
5. Ah!
6. Co-boss.
7. D. E. Miller.

No one should think his home too isolated to be of importance. All reports will be welcome, no matter where they come from. This is a subject in which some member of every intelligent family should interest himself, in order that his locality may not go unrepresented. A son or a daughter may do it as well as the father or mother. The important thing is that it be not neglected.

Reports should be sent to me at 1033 East University Ave., Ann Arbor, Michigan. George Hempe,
President Dialect Society.
University of Mich., Ann Arbor, Mich.

DOMESTIC ECONOMY.

Domestic Hints.

Curry of Turkey.—Put two tablespoonfuls of butter in the chafing dish, with good sized onion chopped fine, eight or ten pepper corns, a dash of mace and two or three bay leaves. Stir until the onion is nicely browned, then add two tablespoonfuls of flour, one tablespoonful of curry powder, juice of half a lemon, salt and pepper and one pint of good stock. Let simmer for ten minutes, strain, and add one pint of cold boiled turkey cut into dice. Any kind of cold meat may be substituted for the turkey.

White Sauce.—Two tablespoonfuls of butter, two heaping tablespoonfuls flour, one pint of milk (or cream), one-half teaspoonful of salt, one-half saltspoonful of pepper. Place chafing dish directly over the flame and cook the butter until it bubbles; then add the flour, and cook thoroughly. Thus the flour sacs are burst open by the great heat, and made digestible. Now place the hot water pan under the chafing dish, and add the milk in thirds, being careful to rub the sauce as it thickens into a smooth paste each time before adding more milk. The seasoning should be put in last.

Diced Turnips.—Wash and cut a French turnip into half or three-quarter inch slices, then pare and put the slices together again, and cut into slices and then at right angles, making cubes or dice. Cook in boiling, salted water until tender. Drain very dry, and keep hot and partially uncovered on the back of the range until ready to serve; then drain again, and turn into a dish and pour prepared butter over them. For one quart of the turnips allow one heaping tablespoonful of butter, rub it to a cream in a bowl, add half a teaspoonful of salt and a saltspoonful of pepper. Pour this over the hot turnip and garnish with a little parsley.

Hints to Housekeepers.

Stewed figs served on rice with cream make an appetizing change for the breakfast cereal.

Faded fabrics colored with aniline dyes will look as bright as new if sponged with chloroform.

To make creamy rice pudding use one quart of milk, a quarter of a cupful of rice, three-eighths of a cupful of sugar and half a cupful of stoned raisins. Bake very slowly for four and a half hours, or longer if necessary, stirring occasionally to keep the rice from settling to the bottom.

A rich, nutty flavor peculiar to winter squash is lost when the vegetable is boiled. Wash and dry the squash and cut it, without removing the shell, into pieces about three inches square. Take out the seeds, brush the inside of each with butter, place in a pan and bake in a medium hot oven. Serve on the shells, brushing again with melted butter and sprinkling with salt before sending to the table.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 23, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	Feb.	May
Wednesday	—@—	81¼@80⅛
Thursday	—@—	79⅛@80⅝
Friday	—@—	80¼@79⅛
Saturday	—@—	79⅝@79⅛
Monday	—@—	79¼@80¼
Tuesday	—@—	80 @79¼

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	6s 1½d	6s 1¼d
Thursday	6s 0⅝d	6s 0⅞d
Friday	6s 0⅝d	6s 0⅞d
Saturday	6s 0⅝d	6s 0⅞d
Monday	6s 1 d	6s 1¼d
Tuesday	6s 0¾d	6s 1 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 03⅜@1 03⅞	1 07½@1 07⅞
Friday	1 03½@1 03¼	1 07⅜@1 07⅜
Saturday	1 03⅜@——	1 07⅜@——
Monday	1 01 @1 03⅜	1 07⅜@——
Tuesday	——@——	1 07¾@——
Wednesday	1 03¾@——	1 07⅜@1 07⅝

WHEAT.

The wheat market has continued since last review, both abroad and here, in much the same inactive and featureless condition as previously noted. Neither shippers nor millers did any noteworthy purchasing in this center. Attempts to purchase freely would have caused a hardening in prices, while any special pressure to realize would have necessitated the acceptance of lower figures than were quoted. The exceedingly bright prospects in this State for this early date for coming crop naturally aid in imparting weakness to the immediate market. This fact, taken in connection with the rather light supply of ships and the continued high ocean freight rates, together with the very tranquil state of the wheat trade in foreign centers, readily account for the existing lethargy here, as also for the absence of firmness. The near approach of tax time is also having its effect, as shippers will certainly arrange to have as little wheat as possible in sight for the tax gatherer on the first Monday in March. Without some unusual developments abroad, of which there is now not the slightest indication to warrant anticipating, the market is apt to incline against sellers for at least a month or six weeks to come. The visible supply of wheat in the United States east of the Rockies is reported at 61,169,000 bushels, indicating a decrease for the week of 749,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.03⅜@1.04.

December, 1901, delivery, $1.07⅜@1.07⅞.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.03¾; December, 1901, $1.07⅜@1.07⅝.

California Milling	$1 00 @1 05
Cal. No. 1 shipping, alongside	98¾@1 00
Oregon Valley	97½@1 00
Washington Blue Stem	1 00 @1 05
Washington Club	97½@1 02½
Off qualities wheat	92½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s2d@6s2½d	6s4d@6s4½d
Freight rates	35@36¼s	37½@38¾s
Local market	$0 93¾@96¼	$0 97½@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is no improvement to note in the condition of the market, nor are prospects encouraging for any change for the better in the immediate future. Spot supplies are of fairly liberal volume, and a much greater demand than exists could be readily accommodated. Quotations are unchanged, but business at top figures is the exception.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

So far as actual trading is concerned, there has been a very quiet market the current week. There has been some movement outward, but almost wholly out of stocks in the hands of shippers, and representing previous purchases. Business on local account was of light volume, millers and dealers confining their buying as closely as possible to most immediate needs. Offerings at current rates are not particularly heavy, especially of high-grade barley. Prospects at the moment are not favorable, however, for the development of any pronounced strength during the balance of the season. Trading in options was of slim proportions and fluctuations in futures kept within narrow bounds.

Feed, No. 1 to choice	73¾@ 75
Feed, fair to good	70 @ 72½
Brewing, No. 1 to choice	80 @ 85
Chevalier, No. 1 to choice	97½@1 02½
Chevalier, No. 2	85 @ 90
Chevalier, poor	70 @ 75

OATS.

Values remain at a comparatively high range, with offerings light, especially of choice to fancy white oats. Some white oats are being landed here from the East, owing to the paucity of domestic stocks. Colored oats constitute the bulk of present offerings, and these are only in moderate supply, values for the same being well maintained.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 32½@1 40
White, poor to fair	1 20 @1 27½
Gray, common to choice	1 20 @1 37½
Milling	1 45 @1 50
Surprise, good to choice	——@——
Black Russian	1 15 @1 35
Red	1 20 @1 40

CORN.

General conditions and quotable values of the market for this cereal remain much the same as last noted. Supplies of Eastern corn are of fair volume, but stocks of local product are light. Small Yellow continues scarce and high.

Large White, good to choice	1 15 @1 17½
Large Yellow	1 15 @1 17½
Small Yellow	1 50 @——
Eastern, in bulk (carload lots)	1 07½@1 09

RYE.

Very little movement. The market presents an easy tone at quotably reduced rates.

Good to choice, new	85 @ 87½

BUCKWHEAT.

Spot supplies are wholly in second hands and are firmly held at the advance last quoted.

Good to choice	2 00 @2 10

BEANS.

The recent reductions of the previously very light stocks of white beans, through purchases on Government account, have caused holders as a rule to ask still higher figures than had been prevailing. The inquiry at current rates, however, is exceedingly limited. Limas are in light stock and quite firmly hold. There is a moderate movement in colored beans at generally unchanged values, but the tendency is to firmer rather than easier figures, especially on most desirable qualities.

Pea, fair to good, 100 lbs	—— @——
Small White, good to choice	4 75 @4 90
Lady Washington	4 10 @4 25
Butter	4 25 @4 50
Pinks	2 20 @2 35
Bayos, good to choice	2 50 @2 75
Reds	3 00 @3 25
Red Kidney	4 00 @4 25
Limas, good to choice	5 65 @5 75
Black-eye Beans	2 75 @3 00
Horse Beans	1 75 @2 00
Garhanzos, large	2 00 @2 25
Garhanzos, small	1 25 @1 75

DRIED PEAS.

Spot supplies of Green Peas are light, and a considerable proportion of the same is Eastern product. Values are being well maintained at the figures quoted. In Niles Peas there is nothing of consequence doing and market for this variety lacks firmness.

Green Peas, California	2 60 @2 75
Niles Peas	1 85 @2 00

WOOL.

There is no business worthy of special mention. Eastern and local operators are making inquiries as to quantities and qualities to their suiting and prices for the same, but transfers are exceedingly slow in being effected. It looks as though there would not be much trading before the opening of the Spring season, but that is close at hand. The coming clip promises to be first-class in every respect.

SPRING.

Humboldt and Mendocino	16 @17
Northern, free	14 @15
Northern, defective	12 @13
Middle Counties, free	14 @15
Middle Counties, defective	11 @13
Southern, 12 mos	8 @10
Southern, free, 7 mos	9 @11
Southern, defective, 7 mos	8 @ 9
Oregon Valley, fine	17 @18
Oregon Valley, coarse to medium	16 @17
Eastern Oregon, choice	13 @15
Eastern Oregon, fair to good	10 @12
Nevada, as to condition	11 @15

FALL.

Humboldt and Mendocino	11 @13
Middle County	9 @10
San Joaquin	7 @ 9
San Joaquin Lambs	8 @ 9

HOPS.

Offerings and inquiry are both light. Quotable values remain undisturbed, but in the absence of any business worth mentioning, prices are for the time being largely nominal. A sailing vessel, clearing this week for Australia, took as part cargo 21,800 lbs. hops or about 100 bales. Stocks now in the hands of growers are of small volume and include few choice.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

Stormy weather operated against business in this line during a part of the week, and when the weather was fair buyers did not show inclination to take hold very freely. Transfers effected were at figures warranting no special changes in the quotations for hay, but market was not firm. Values for Straw were fairly steady.

Wheat	8 00@12 50
Wheat and Oat	8 00@11 50
Oat	7 00@11 50
Barley	6 00@ 9 50
Volunteer	5 00@ 7 00
Alfalfa	8 00@ 9 50
Stock	5 00@ 7 00
Compressed	9 00@13 00
Straw, ₱ bale	40 @ 47½

MILLSTUFFS.

Bran has been quite firmly held during current week, with stocks of limited volume and in comparatively few hands. Prices for Middlings and Shorts remained about as last quoted; while offerings of either description were not of heavy volume, they proved sufficient for the immediate inquiry. Rolled Barley and Milled Corn were not quotably lower, but market was not especially firm.

Bran, ₱ ton	14 50@15 00
Middlings	16 50@19 00
Shorts, Oregon	14 50@15 50
Barley, Rolled	16 50@17 00
Cornmeal	25 50@ ——
Cracked Corn	26 50@ ——

SEEDS.

Mustard Seed continues in too limited supply to admit of regular quotations. Flaxseed is without quotable change; most of the arrivals represent deliveries on contracts. In bird seed the little business doing is at generally unchanged values. Alfalfa Seed is offering in very moderate quantity, either domestic or imported, and tendency is to more firmness.

	Per ctl.
Mustard, Trieste	—@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The market is quiet throughout, with asking prices in virtually the same position as previously quoted. The Calcutta Grain Bag market is moderately firm, and this, in connection with the excellent crop prospects in this State, makes it very probable that prices for bags will rule higher the coming Summer than they did last season.

Calcutta Grain Bags, buyer June-July	6¼@ 6⅜
Calcutta Grain Bags, spot	6 @ 6¼
San Francisco Grain Bags, 22x36, spot	6 @—
State Prison Bags in lots of 2000, ₱ 100	—@—
Wool Sacks, 4 lbs	—@32½
Wool Sacks, 3½ lbs	—@28½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅜@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

No changes worth noting have been developed in the Hide and Pelt market since last report. Demand is not brisk at full current rates. Tallow is meeting with custom about as rapidly as it arrives, and it is the exception where full current figures are not realized.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	9
Medium Steers, 48 to 56 lbs	9	8
Light Steers, under 48 lbs	8	7
Heavy Cow Hides, over 50 lbs	8½	7½
Light Cow Hides, under 50 lbs	8	7
Wet Salted Kip	9	8
Wet Salted Veal	9	8
Wet Salted Calf	10	9
Dry Hides	15½	13½
Dry Kip and Veal, 11 to 16 lbs	15	12
Dry Calf, under 4 lbs	16 @	14
Salted Horse Hides, large	2 50 @	—
Salted Horse Hides medium	2 00 @	—
Salted Horse Hides, small	1 00 @	—
Dry Horse Hides, large	1 75 @	—
Dry Horse Hides, small	1 00 @1 50	
Dry Colts' Hides	50 @	—
Pelts, long wool, ₱ skin	75 @1 00	
Pelts, medium, ₱ skin	60 @ 75	
Pelts, short wool, ₱ skin	30 @ 50	
Pelts, shearling, ₱ skin	10 @ 25	
Deer Skins, best summer	35 @ —	
Deer Skins, good medium	— @ 30	
Deer Skins, thin winter	— @ 10	
Elk Hides	10 @ 12	
Tallow, good quality	4 @ —	
Tallow, No. 2	3½@ 3¾	
Goat Skins, perfect	30 @ 37½	
Goat Skins, damaged	10 @ 20	
Kid Skins	5 @ 10	

HONEY.

There is not much honey of any description now offering, neither is the inquiry active at current rates. Especially is water white in light stock, there being hardly enough of latter sort to warrant quoting.

Extracted, White Liquid	7½@ 8
Extracted, Light Amber	6¾@ 7¼
Extracted, Amber	5½@ 6½
White Comb, 1 lb frames	13 @14
Amber Comb	11½@12½
Dark Comb	8 @ 9

BEESWAX.

Only small quantities are arriving. There is no lack of demand for desirable qualities, market for such showing firmness.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

While demand for Beef is not active at the stiff figures now current, there is no prospect of materially lower prices soon ruling. Mutton is not arriving in heavy quantity, and quoted values on same, which are about the same as a week ago, are being well sustained. Lamb is being favored with a firm market, as is also Veal of desirable age. Hogs inclined in favor of sellers, commanding better average prices than previous week.

Beef, first quality, dressed, net ₱ lb	8 @ 8½
Beef, second quality	7½@ 8
Beef, third quality	6½@ 7
Mutton—ewes, 9@9½c; wethers	9½@10
Hogs, hard grain fed, medium	5⅞@ 6
Hogs, small, fat	5¾@ 6
Hogs, large, hard	5⅝@ 5¾
Hogs, feeders	5 @ 5¼
Hogs, country dressed	7½@ 8
Veal, small, ₱ lb	6 @ 9
Veal, large, ₱ lb	7 @ 8½
Lamb, yearlings, ₱ lb	10 @11
Lamb, spring, ₱ lb	12½@15

POULTRY.

The market has shown weakness most of the time since last review, especially for old fowls and full grown young stock. Eastern poultry was in fairly liberal receipt, and to this fact, as well as to the rather light demand, was due the existing weakness, rather than to the quantity of California poultry offering, which was not heavy. Fryers and Broilers were in light supply and in a limited way brought comparatively good figures. Young Pigeons were scarce and high.

Turkeys, live hens, ₱ lb	11 @ 12
Turkeys, live gobblers, ₱ lb	10 @ 11
Turkeys, Dressed, per lb	12 @ 14
Hens, California, ₱ dozen	3 50 @4 50
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	4 50 @5 00
Fryers	4 00 @4 50
Broilers, large	4 00 @4 50
Broilers, small	3 00 @3 50
Ducks, old, ₱ dozen	4 00 @5 00
Ducks, young, ₱ dozen	5 00 @6 50
Geese, ₱ pair	1 75 @2 00
Goslings, ₱ pair	1 75 @2 00
Pigeons, old, ₱ dozen	1 00 @1 25
Pigeons, young	2 50 @2 75

BUTTER.

Best qualities of fresh have been moving readily at the last noted decline, and in some instances most favorite brands have been selling slightly above rates quoted. For all defective qualities of fresh, however, the market remains dull and weak. Held butter is still in fair supply and is taking the place of ordinary fresh.

Creamery, extras, ₱ lb	20 @—
Creamery, firsts	18 @—
Creamery, seconds	17 @—
Dairy, select	17 @18
Dairy, firsts	15 @16
Dairy, seconds	13 @14
Dairy, soft and weedy	— @—
Mixed store	12 @13
Creamery in tubs	17 @19
Pickled Roll	18 @19
Firkin, California, choice to select	17 @19
Firkin, common to fair	16 @17

CHEESE.

Stocks are not heavy, but buyers are operating very slowly, causing the market to incline downward. At lowest figures current, however, cheese is bringing decidedly better figures than butter. Eastern product is in slim supply and is being steadily held.

California, fancy flat, new	11½@—
California, good to choice	10 @11
California, fair to good	9½@10
California Cheddar	— @—
California, "Young Americas"	10 @12

EGGS.

Immediately following last review the market showed weakness and dealers marked down quotations about 2c. per dozen. This improved the demand and stormy weather checked the receipts, so there was a recovery of values to about same figures current at date of our previous report. That the market will long remain firm is not probable.

California, select, large, white and fresh.	27	@	—
California, select, irregular color & size.	25	@	26
California, good to choice store	24	@	25
Eastern, as to section and grading	—	@	—
Eastern, cold storage	20	@	—

VEGETABLES.

The display of vegetables was not very extensive as to variety, and the quantity of most kinds was of light volume. Onions were in increased receipt, as compared with a week or two preceding, but represented in the main prior arrival purchases, and market continued firm. Spring vegetables made a rather poor showing, and desirable qualities brought as a rule stiff prices.

Asparagus, ℔ lb	15	@	25
Beans, String, ℔ lb	10	@	12½
Beans, Wax, ℔ lb	—	@	—
Beans, Lima, ℔ lb	—	@	—
Cabbage, choice garden, ℔ 100 lbs	1 00	@	1 25
Cauliflower, ℔ dozen	50	@	—
Egg Plant, ℔ lb	10	@	12½
Garlic, ℔ lb	3½	@	4½
Mushrooms, Wild, ℔ lb	—	@	—
Musbrooms, Buttons, ℔ lb	—	@	—
Onions, Yellow Danver, ℔ cental	1 75	@	2 25
Peas, Sweet, garden, ℔ lb	5	@	7
Peppers, Green Chile, ℔ lb	—	@	—
Squash and Pumpkin, ℔ ton	15 00	@	20 00
Tomatoes, ℔ crate	1 25	@	2 00

POTATOES.

Select qualities of Burbank's Seedlings, of uniform and desirable size and in every way suited to the wants of the most particular trade, were not in large supply, and such stock was favored with a tolerably firm market. More ordinary qualities were, however, in very liberal supply, and such were offered at fully as easy figures as previously quoted, with demand slow. Sweets were in fair receipt and not in very active request.

Burbanks, River, ℔ cental	30	@	60
Burbanks, Petaluma-Tomales, ℔ ctl.	35	@	60
Burbanks, Salinas, ℔ cental	85	@	1 15
Burbanks, Oregon, lb cental	55	@	90
Garnet Chile, ℔ cental	75	@	90
Peerless, ℔ cental	65	@	1 00
Sweet Potatoes, Yellow, ℔ cental	75	@	1 10

The Fruit Market.

FRESH FRUITS.

The market for Apples has developed no pronounced changes since last review. Stocks of common to medium qualities are of fair proportions for this time of year, and are proving ample for the demand for these grades. Choice to fancy table Apples are not plentiful, especially desirable red varieties, and for this sort the market has been inclining against buyers, some sales being effected above quotable rates.

Apples, fancy, 4-tier box	1 25	@	1 50
Apples, good to choice, ℔ 50-lb box.	65	@	1 00
Apples, common to fair, ℔ 50-lb box.	25	@	50

DRIED FRUITS.

Inactivity is still prevailing in the market for cured and evaporated fruits. Handlers are bewailing that they never saw the situation quite so bad as at present. There is certainly no recollection of the trade ever having been any duller, and in the matter of prices of most kinds, never so low as at this date. This is notably the case with Prunes. One sale was reported of 100's outside of Association control at $25 per ton, f. o. b. at shipping point, but this figure, although extremely low, is up to Association card rates for cheapest stock, and some transfers have been made in the interior at still lower prices. In a few remote districts Prunes are being fed to hogs, and in this way are being turned to more profitable account than if the fruit was sold for human food. Hogs are bringing in this center 6c per lb. for choice stock, or $120 per ton gross, which it must be admitted shows quite a contrast when compared with $25 per ton for Prunes. In the northern district 80-90's are obtainable in limited quantity at 1¾c, but there is no rush of buyers at this or any other figure, as is almost invariably the case on a soft market. Where there is lack of confidence, low prices prove no temptation. Double eagles offered under tho same conditions at $19.50 would be rejected by the majority of people. The Prune market will not forever, or for any very long time, remain in its present state, but just how soon it will be successfully landed out of the slough of despond in which it is now floundering remains to be determined. There is some speculative inquiry for Peaches, which are not offering in large quantity, but prices generally named do not warrant advancing quotations. Market for Apples, Pears and Plums is virtually dead for the time being. In fact, quotations throughout represent at this date little other than asking rates.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6½	@	7
Apricots, Royal, choice, in sacks, ℔ lb.	7½	@	8
Apricots, Royal, fancy	9	@	—
Apricots, Moorpark	9½	@	11½
Apples, in 50-lb boxes, rings, pressed, fancy	5¼	@	5½
Apples, 50-lb boxes, rings, pressed, good to choice	3½	@	4½
Figs, White, fancy pressed	6	@	7
Nectarines, ℔ lb	4	@	6
Peaches, unpeeled, fancy	6	@	6½
Peaches, unpeeled, choice	4½	@	5
Peaches, peeled, in boxes	11	@	14
Pears, unpeeled Bartletts, halved, fancy.	5	@	6
Pears, halved, unpeeled Bartletts	3½	@	4½
Pears, quartered, unpeeled Bartletts	3½	@	4½
Plums, Black, pitted	4	@	5
Plums, White and Red	5	@	6
Prunes, Silver	4½	@	6

COMMON SUN-DRIED.

Apples, sliced	2	@	3
Apples, quartered	2	@	3
Figs, Black	1½	@	2½
Figs, White	2½	@	3½
Peaches, unpeeled	3	@	5

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

There is little doing in Raisins, but there are no offerings outside of Association stocks. Official rates remain unchanged. It is stated that Pacifics, a brand given to second grade Raisins, which have been withheld from sale thus far this season, will soon be placed on the market by the Association, but prices for the same have not yet been announced.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@	—
Debesa Clusters, 5-crown	2 50	@	—
Fancy Clusters, 4-crown	2 00	@	—
London Layers, 3-crown, ℔ box	1 60	@	—
do do 2-crown, ℔ box	1 50	@	—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb		—@	7
Loose Muscatel, 3-crown		—@	6½
Loose Muscatel, 2-crown standard		—@	6
Loose Muscatel, seedless		—@	6½

(Above prices for loose raisins are for 50-lb boxes.)

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Orange market is quite liberally stocked with other than the most select Navels, and for the ordinary run of offerings shows weakness, although in the quotable range of values there are no pronounced changes. Lemons are offering at virtually the same figures current for some weeks past, but are moving very slowly. Limes are in fair supply, but are ruling steady, stocks being in few hands.

Oranges—Navel, ℔ box	1 00	@	2 25
Valencia, ℔ box	—	@	—
Seedlings, ℔ box	50	@	1 25
Tangerines, ℔ box	50	@	1 25
Grape Fruit, ℔ box	1 00	@	2 00
Lemons—California, select, ℔ box	2 25	@	—
California, good to choice	1 50	@	2 00
California, common to fair	75	@	1 25
Limes—Mexican, ℔ box	4 50	@	5 00
California, small box	50	@	1 00

NUTS.

Quotable values for Almonds are unchanged. Offerings are not heavy, but are in excess of the inquiry. Stocks of Walnuts have been materially reduced by recent shipments Eastward, transfers having been mainly at 9½c. for No. 1 soft shell, 9c. for No. 1 standard, and 2c. less for seconds.

California Almonds, shelled	22	@	25
California Almonds, paper shell, ℔ lb	12	@	13
California Almonds, soft shell	9	@	11
California Almonds, hard shell	6	@	7
Walnuts, White, soft shell	7½	@	9½
Walnuts, White, California, standard	7	@	9
Chestnuts, California Italian		—@	—
Peanuts, California, fair to prime	4½	@	5½
Peanuts, Eastern, hand-picked	5½	@	6
Pine Nuts	5	@	6

WINE.

Firmness in the wine market is fully as pronounced as previously noted. Dry wines of last year's vintage are quotable at 16@19c per gallon, some holders contending for an advance on these figures. That stiffer prices than are now current will be established before the close of the season is probable. There are no large quantities now remaining in first hands. The movement outward by sea and rail is of fair average proportions for this time of year.

LEE D. CRAIG,
Notary Public and Commissioner of Deeds,
316 MONTGOMERY STREET,
Bet. California and Pine, SAN FRANCISCO, CAL.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	109,555	3,701,295	3,231,348
Wheat, centals	335,262	4,023,487	2,709,490
Barley, centals	136,400	2,653,937	4,052,289
Oats, centals	4,565	462,961	575,618
Corn, centals	785	74,640	89,519
Rye, centals	130	98,192	85,315
Beans, sacks	11,869	486,411	294,048
Potatoes, sacks	44,254	986,700	775,781
Onions, sacks	2,241	132,700	123 167
Hay, tons	2,441	103,734	101,169
Wool, bales	74	22,243	35,530
Hops, bales	198	6,426	8,512

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	56,632	2,098,040	1,948,397
Wheat, centals	247,589	3,810,733	2,327,232
Barley, centals	102,748	1,596,198	3,197,275
Oats, centals	...	46,979	26,962
Corn, centals	...	2 269	11,424
Beans, sacks	53	9,576	18,731
Hay, bales	10	82 140	67,588
Wool, pounds	...	233,621	3,656,595
Hops, pounds	8,218	434,025	765,764
Honey, cases	10	1,642	3,239
Potatoes, packages	6,627	70,113	48,715

California Dried Fruit at New York.

NEW YORK, Jan. 23.—Evaporated apples, common, 3¾@4¾c; prime wire tray, 5@5¾c; choice, 5½@6c; fancy, 6@7c.

California Dried Fruits.—Business is of a light order and at generally unchanged values.

Prunes, 3¼@8½c.

Apricots, Royal, 7½@12c; Moorpark, 9@15c.

Peaches, unpeeled, 6½@10c; peeled, 14@18c.

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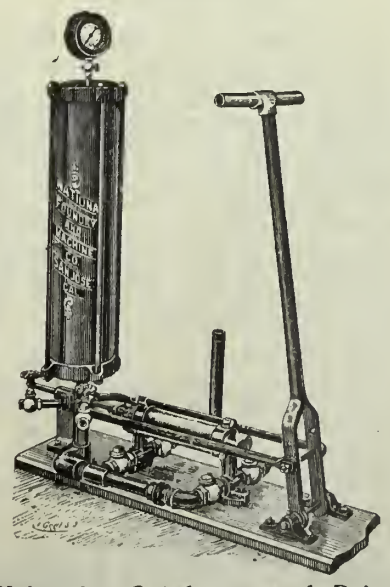
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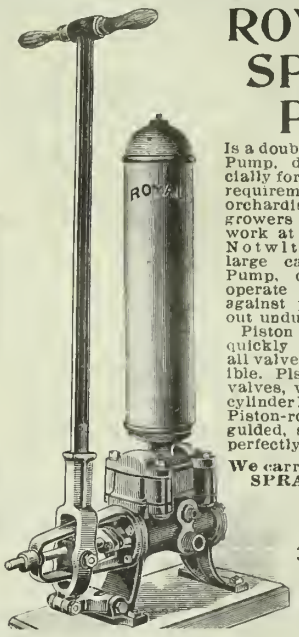
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Piston is easily and quickly repacked and all valves easily accessible. Piston, piston-rod, valves, valve seats and cylinder lining are brass. Piston-rod is outside guided, so that it runs perfectly straight.
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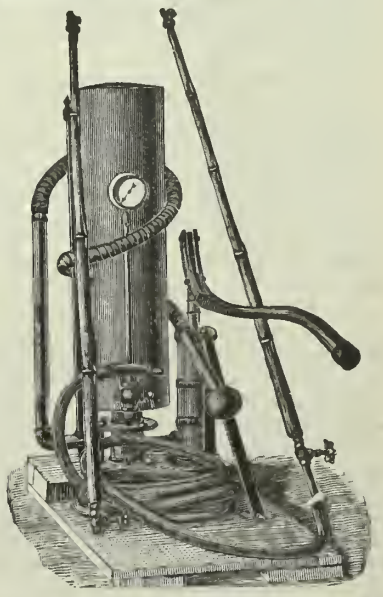
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THE VETERINARIAN.

The Michigan Plan With Tuberculosis.

J. H. Brown, president of the Michigan Live Stock Sanitary Commission, writes for Hoard's Dairyman the following interesting sketch of a rational way of dealing with tuberculosis. He says: We make tuberculin tests of dairy and breeding cattle only when requested to do so, upon personal application of the owners. An application is filled out, naming all conditions, and signed by both the cattle owner and the Commission, or a member thereof. Each owner has a copy for filing, and for future reference.

THE METHOD.—Only suspected herds are tested, under our present law, and this is done to assist the cattle owner in separating the diseased from the healthy animals. From that time the two classes of cattle are not allowed to associate together, though they may possibly be kept in the same building or stable. The owner is allowed his choice of quarantining or destroying the reacting animals. Those that show, from the external diagnosis, that they are running down, the owner is anxious to destroy at once.

Cows that are due to calve soon; that are apparently healthy; that are especially valuable in pedigree, or performance at the pail, and cows in good flesh, that probably have the disease in an incipient form, are all usually isolated from the non-reacting animals, and retested in ninety days or more. Sometimes a cow, in an incipient stage of tuberculosis, appears to throw off the disease after being isolated for some time, improves in appearance, and fails to react upon a re-test. She is then allowed to go back into the herd. The writer does not believe in destroying all reacting animals, for the above mentioned reasons, even when the owner is willing to do so.

Our present plan is somewhat similar to that practiced by Prof. Bang of Denmark, and is advocated by Dr. Leonard Pearson of the Pennsylvania Live Stock Board. It helps the owner of a tuberculosis herd to gradually eliminate the disease, and he will then see that no diseased animal ever after enters his premises, by purchase or otherwise.

Our Michigan live stock laws do not allow us to even partially compensate the owners of tuberculosis animals for their destruction. In one sense these animals are worthless, but I earnestly believe the State should provide funds to at least partially compensate those who destroy such cattle. It is done as much for the protection of the public as for the individual owner, and especially for the protection of the live stock of the State. It would also encourage the reporting of suspicious herds by certain owners, who fear to lose their cattle even when badly diseased.

A REVIEW OF THE SITUATION.—Michigan has a smaller per cent of the tuberculous dairy cattle than some of our sister States, especially those south and east of us. But there is more tuberculosis among our dairy cattle in certain sections than we formerly supposed.

However, there is no great cause for serious alarm under present regulations. The disease cannot originate of itself. There must be a germ present to inoculate an animal, and if a farmer has no tuberculous animal on his premises, he should have no fear of the disease, as a general thing. This disease is usually brought into a farmer's dairy herd by the purchase of an infected animal, which is allowed to associate more or less with the remainder of the herd. Hence, all purchases of dairy or breeding stock, from strange herds especially, should be tested before associating with a known healthy or tested herd. All tests should be made by experts, or those perfectly familiar with all details and conditions connected with the test.

AVOIDING THE DISEASE.—A healthy dairy herd can be kept healthy by adopting practical sanitary precautions. A dry, fairly warm stable, well lighted and ventilated, is best, under all conditions. In such a stable there is less danger of a tuberculous cow spreading the disease, than in a stable where unsanitary conditions prevail. And again, where healthy cows are kept in a badly ventilated and poorly lighted stable, the disease cannot originate. But let one tuberculous animal into such a stable and the disease will, sooner or later, affect nearly the whole herd. No matter which way you look at it, a sanitary stable is essential to the dairyman who keeps cows for the purpose of making some money out of them.

It is enough for us to know that bovine tuberculosis exists in places all through our civilized countries where dairy cattle are kept. We know the disease will spread from one animal to another, when associated together, and especially in unsanitary environments. We know that a tuberculous animal, or herd, is a great damage to the owner, and his pocket-book, and will, ultimately, prove a serious loss to him, to say nothing about the danger to consumers of milk and meat from such animals. We know the disease can be eradicated from an infected herd, and it is always to the owner's financial interests to do this; and the sooner it is done the better it is for the dairyman's own personal interest.

Answers by Dr. Creely.

FOR A DROOPY HORSE.

TO THE EDITOR:—I have a large work horse that is very poor and listless. His appetite is very good, but hardly voracious; his bowels are in a good, healthy condition, but he passes about double the normal amount of urine, it often being nearly, if not entirely, uncolored. He often has the appearance of being unable to retain it, this being more noticeable when he is worked—in fact, work seems to aggravate all the symptoms. He has been used for heavy hauling. Could Dr. Creely suggest treatment from these symptoms?—ERNEST MOYER, Napa.

Fix the teeth; give a good condition powder, and if fast work does not agree with him put him at slow work. Give one quart daily of flaxseed tea.

E. J. CREELY, D. V. S.
510 Golden Gate avenue, S. F.

STATE OF OHIO, CITY OF TOLEDO, LUCAS COUNTY, } ss.

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.
FRANK J. CHENEY.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.
{SEAL} A. W. GLEASON, Notary Public.
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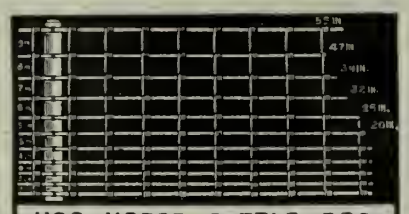
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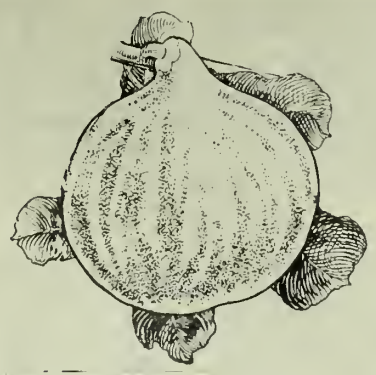

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Grass Valley Grange.

To the Editor: — Grass Valley Grange, No. 286, P. of H., met in regular session January 12, 1901. Installation of officers for the new year was had as follows: Worthy Master, F. M. Reed (re-elected); Worthy Overseer, J. J. McKenna; Worthy Lecturer, Sister J. R. Wilson; Worthy Steward, Mike Kendrick; Worthy Assistant Steward, Richard Bree; Worthy Chaplain, Mrs. R. S. Twitchell; Worthy Treasurer, O. L. Twitchell; Worthy Secretary, Miss Abbie Ford; Worthy Gatekeeper, Millard Stockdale; Worthy Pomona, Miss Olive Green; Worthy Flora, Miss Alice Reed; Worthy Ceres, Mrs. Mary Reed; Worthy Organist, Miss Queenie Wilson; Trustee, Wm. H. Bryan.

Worthy Past Master O. L. Twitchell installed the officers, assisted by Miss Lynette Hughes.

After installation a very fine programme was given by the members, assisted by some local outside talent. No banquet was indulged in, as this was our first meeting in a new hall and we were not yet settled.

Three new names were presented, making seven in all, on their way to the Master's desk.

The harvest feast being prospective in the near future, it was thought best to concentrate our energies on that occasion. R. S. Twitchell.

Sonoma County Pomona Grange.

This Grange was in session at Santa Rosa last week. The Petaluma Argus says W. D. Houx, who retired from the position of Master, called the meeting to order about 10:30 o'clock. During his tenure of the office, Mr. Houx has not been known to miss a single meeting and has taken a great interest in Grange matters. He turned over the gavel to his successor—H. Johnson of Petaluma.

At the morning session the reports from the county Granges were heard and showed that the work of the Order is being maintained.

At noon the feast of Pomona was served. The best products of the farm, orchard and dairy loaded down the tables, and men and women from northern and southern, eastern and western Sonoma did justice to the menu.

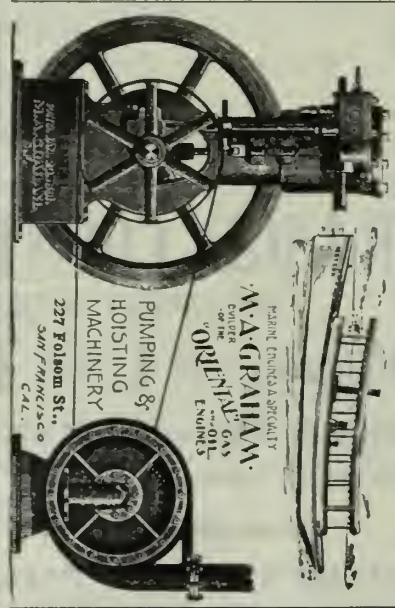
At 1:30 o'clock the business of the meeting was resumed and the newly elected officers were installed. Addresses for the good of the Order were also made. The new officers of Pomona Grange are as follows: H. Johnson, Petaluma, Master; W. H. Skinner, Healdsburg, Overseer; A. R. Galloway, Healdsburg, Lecturer; Mrs. C. D. Grover, Petaluma, Chaplain; P. Hansen, Bennett Valley, Steward; Harvey Gregory, Santa Rosa, Asst. Steward; Miss Fannie Gamble, Santa Rosa, Secretary; G. N. Whittaker, Bennett Valley, Treasurer; John Strong, Bennett Valley, Gate-keeper; Mrs. M. B. Mac, Santa Rosa, Pomona; Mrs. R. G. Sutherland, Glen Ellen, Ceres; Mrs. James Moran, Sebastopol, Flora; Mrs. Hunt, Sebastopol, Lady Asst. Steward; Mrs. W. H. Skinner, Healdsburg, Organist.

Holstein-Friesian Sale.

F. H. Burke has sold thirteen head of thoroughbred Holstein-Friesian cows to the Milbrae Dairy, property of D. O. Mills. As this is the second herd of these thoroughbred Holsteins that Mr. Burke has sold him in two years, it speaks well for the breed and his satisfaction with the same, as they milk some 400 cows, and claim to be able to make more money with these thoroughbred Holsteins, despite the increased prices they have to pay for them, than of any of their herd. All but three of these animals are of Mr. Burke's raising, and many of them prize winners at recent fairs, the cow Hight Ulah IV having won the first prize in the butter contest at the State Fair, both in 1898 and 1899, the best herds of Durhams and Jerseys on the coast competing. Carina of La Siesta won second prize in the butter contest of 1898, Mr. Burke's cow also winning the first.

We notice in an Eastern exchange that a balloonist declares: "The Page Woven Wire Fence, which surrounds our balloon enclosure, protects us from the large crowds which surround us during the preparations for our ascension. It stands the strain of the people hanging upon it, which certainly is a very good test."

Barngrover, Hull & Co. of San Jose have bought the plant and business of the National Foundry & Machine Co. of that city, and will in future operate it as part of their extensive establishment.



MONEY IN HONEY!
THE WEEKLY AMERICAN BEE JOURNAL
Tells all about it.
Sample Copy Mailed Free.
G. W. YORK & CO.
118 Michigan St., Chicago, Ill.

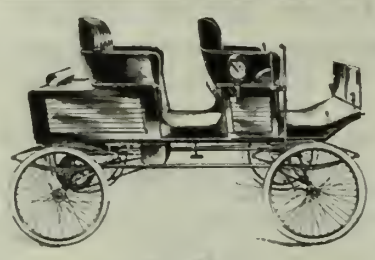
PASTURE. 80 acres, fenced, old house, running ditches, along the railroad between Anderson and Redding. $200.00. Address C. K., this office.

Coughs & Colds Cured with R. Hall's Pulmonary Balsam.

If You Want to Make the Best Butter
that can be made from good cream, buy and use the
Squeezer
COMBINED
Churn and Worker.

It is the most exhaustive churn and takes out all the butter fat in cream, at either high or low temperature. It is free from friction and does not grind or smear the butter. It both makes and preserves perfect grain. It squeezes—presses out the milk and water as it were. Distributes the salt with absolute evenness, preventing all spotted or mottled butter. Then too, it is so easy to operate and so easy to clean. This size is for the dairy, but we make factory sizes as well. We repair promptly all separators and any kind of dairy and creamery machinery.
Send for Catalogue No. 81 ELGIN MANUFACTURING CO., ELGIN, ILL.

GRAPES PRUNES WHEAT PEACHES
ALMONDS APPLES
THE SECOND, THIRD AND FOURTH
SUBDIVISIONS
—OF THE—
JOHN BIDWELL RANCHO,
Near Chico, Butte County, California,
Are now offered for sale in lots of from 5 TO 40 ACRES. This is the most fertile body of land ever placed on the market, and is located in the FINEST FRUIT SECTION IN THE STATE. It is a living testimonial of the varied fruit and cereal productions that can be grown in the State.
Read What Can Be Grown on This Land
: : : WITHOUT IRRIGATION. : : :
FOR DESCRIPTIVE TREATISE, TERMS, ETC.,
Address B. CUSSICK, Agent,
CHICO, BUTTE COUNTY, CALIFORNIA.
CHERRIES APRICOTS
OLIVES ALFALFA ORANGES PEARS


No. 5.

The "Locomobile" Company
OF THE PACIFIC.
STATIONS: 1255 Market Street, San Francisco. 103 Fouth Broadway, Los Angeles. 106 Telegraph Avenue, Oakland.
Your choice in nine different styles. Ladies can operate them. Sold in guaranteed condition at reasonable prices. Illustrated catalogues and information will be sent on application.

DEWEY, STRONG & CO.,
PATENT SOLICITORS,
330 MARKET STREET, - SAN FRANCISCO, CAL.
Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.

Nitrate of Soda as a Fertilizer.
EXHAUSTED LAND.
The first element to become exhausted in land is nitrogen. The application of 100 lbs. of
NITRATE OF SODA
per acre will supply this and produce astonishing results. It is the cheapest and most available source of nitrogen.
—FOR SALE BY—
BALFOUR, GUTHRIE & CO.,
316 California Street, - - - San Francisco, Cal.
Write to them for pamphlets.

Thomas' - Phosphate Powder. -
Phosphates are the Great Necessity of Successful and Profitable Farming. You cannot grow large crops without an adequate supply of Available Phosphoric Acid in the land. It is best supplied in
THOMAS' PHOSPHATE POWDER,
WHICH IS
THE FERTILIZER OF THE AGE.
Used all over California.
BALFOUR, GUTHRIE & CO.,
316 California Street, - - - San Francisco, Cal.
Write to them for pamphlets.

MURIATE OF POTASH,
SULPHATE OF POTASH,
For Sale by BALFOUR, GUTHRIE & CO., 316 California St., San Francisco.

Old Paper Money.

If the majority of the American public were to be told that they could procure thousands and tens of thousands of dollars of United States money for a few cents they would reply that it was either impossible or a scheme of someone to sell a gold brick.

Yet they would be wrong in both of their suppositions, for it is the absolute truth, and the best place to prove this is in the national capital, Washington, D. C., where the money is made.

When old and worn paper money has been returned to the treasury at Washington the United States Government takes very extraordinary precautions in the destruction of it.

The United States employs a very large force of people who do nothing else but destroy this old and mutilated paper money that has been withdrawn from circulation. Whenever a batch of such bills as these are turned into any subtreasury they are redeemed by having new ones issued in their stead.

These bills are then sent to the treasury at Washington, D. C., and are there sorted and sent to what is known as the redemption division. Here they are thoroughly examined by experts for the purpose of detecting counterfeits.

After this is done, which takes a very long time, they are again counted and sorted and then tied into bundles of one hundred bills each and a record of each bundle is kept. Then these go to the "destruction department," and here, after they are again recorded, they are put into large piercing machines and four large holes are driven through each bundle. They are next passed to a machine for cutting and here each bundle is cut into two equal parts.

From here each half bundle is sent to a different place; one goes to the office of the secretary and the other goes to the office of the registrar. In each of these places the half notes are again counted and a record thereof made. After this has been completed they are sent to the "chopping department," where they are put into machines which cut them into very minute fragments.

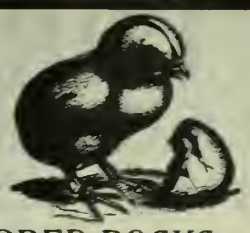
Of these fragments the operators are exceedingly careful not to lose one. This mass of silk-webbed paper which once represented thousands of dollars worth of money is now ready for the "boiling department."

In this place immense vats of water and alkali are kept constantly boiling, and into these vats the mass of fragments of paper is thrown and thoroughly boiled until they become an unrecognizable pulp.

They manufacture this pulp into small models of the capitol, the White House, busts of Washington, Lincoln, Grant and into many other things, and these are sold to the department stores, which sell them for souvenirs for a small sum.—Waverly Magazine.

THE Page Woven Wire Fence Co. of Adrian, Mich., is recapitalized at $1,000,000.00, every dollar paid in, and every share sold. The receivers have been discharged, and the company is again in possession of its entire property, which includes the steel, rod and wire mills at Monessen, Pa., and its original Adrian plant. One of the officers of the company says: "People who have never bought before are buying now, and those who have bought before are buying more. Our sales in November, 1900, exceeded those of November, 1899, by 254 miles, and sales for December, 1900, exceeded those of December, 1899, by 473 miles, and the sales so far in January are not falling off."

LARGE ENGLISH
Berkshire Hogs.
FOR SALE, Some Extra Pigs of Either Sex.
Sired by Romford Duke XXVIII, 36115, and out of daughters and granddaughters of Black Knight 30003, the World's Fair sweepstakes winner.
Romford Duke XXVIII, 36115, was sired by W. E. Spicer's great show hog Enterprise 27957.
Also a few choice young sows bred for winter and spring litters.
WRITE FOR PRICES.
Address JOS. P. KELLY,
Waddington, Humboldt Co., Cal.


BARRED ROCKS:
Cockerels .....$4.00 to $6.00
Pullets..... 3.00 to 5.00
Trios..... 9.00 to 12.00
Eggs..... 3.00 per setting.
BUFF COCHINS:
Cockerels .....$3.50 to $5.00
Pullets..... 2.50 to 4.00
Trios..... 8.00 to 11.00
Eggs..... 3.00 per setting.
WHITE LEGHORNS:
Cockerels .....$4.00 to $6.00
Pullets..... 3.50 to 5.00
Trios.....10.00 to 14.00
Eggs..... 3.00 per setting.
Our birds are from the best of stock and have won highest prizes wherever shown.
OAKLAND POULTRY YARDS,
Manufacturers of
Pacific Incubator and Brooder,
1317 Castro St. Oakland, Cal.
Send for Catalogue.

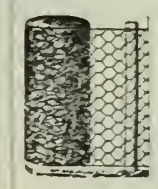
GOOD LITTLE INCUBATORS

Many people want a small incubator but don't want a mere toy, a plaything that will only spoil good eggs. To meet the demand for a really good little incubator we have perfected the now famous Reliable 50 EGG BANTLING SPECIAL. It is the equal of any hatcher ever made, only smaller, and sells for only $5
Send 10c for our 20th Century Catalogue and Poultry Book. Best ever published.
RELIABLE INCB. & BROODER CO., Box B-91, Quincy, Ill

JUST AS NATURAL as the old hen and a good deal more reliable. Doesn't break its eggs or make the chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched. THE PETALUMA INCUBATOR is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 54 to 324 eggs. WE PAY FREIGHT ANYWHERE in the U. S. Handsome catalog free. Petaluma Incubator Co., Box 217 Petaluma, Cal.

FOR SALE.
5 PURE BRED Percherons
(ONE HORSE AND FOUR MARES.)
Address MRS. WM. B. COLLIER, 2509 Pacific Avenue, San Francisco, Cal.

"CALIFORNIA ANGORAS."
A Manual on Angora Goat Breeding,
By the Veteran Goat Breeders of the United States, from an experience of over 30 years in the goat industry.
C. P. BAILEY & SONS, 400 N. 4th Street, SAN JOSE, CAL.
Price. 25 cents, postage prepaid.


WIRE NETTING
for POULTRY and other purposes.
LOW PRICES.
Wire Cloth, Prune Dippers, Graders, Etc.
West Coast Wire & Iron Works, 5 Fremont St., San Francisco.

Cocoanut Oil Cake.
THE BEST FEED FOR STOCK, CHICKENS AND PIGS.
For sale in lots to suit by
EL DORADO LINSEED OIL WORKS CO.
208 California St., San Francisco, Cal.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds. 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs. Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

SHORTHORN CATTLE — Oldest established herd in California; contains the very best beef and milk strains. Best general purpose cattle in the world. W. H. Howard, 523 Montgomery St., S. F.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

DAIRY BULLS. C. A. Stowe, Stockton Creamery.

POULTRY.

TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: Barred Plymouth Rocks and Single-Comb White Leghorns. Write for wants. Fine roosters for sale. Eggs $1.50 per setting of 15. Incubator lots $5.00 per 100.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands: sample 2 cts.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

MEAT MEAL. Best quality. Lowest price. A. Warren Robinson, Napa, Cal.

SWINE.

S. P. LINDGREN & SONS, Kingsburg, Cal. For sale. Poland-China pigs from registered stock.

BERKSHIRE HOGS, headed by the great boar Artful Lee 52650. S. B. Wright, Santa Rosa, Cal.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

THOS. WAITE, Perkins, Cal. Breeder Reg. Berkshires. Sweepstakes State Fair and Tanforan, 1900.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs. My stock have been prize winners for the last 12 years, never winning less than 13 prizes, and in 1900 won 35 at State and Tanforan Fairs; ribbons consist of 22 first, 5 second, and 5 sweepstakes.

SHEEP.

150 FULL BLOODED Merino ewes for sale. Will lamb last of February. S. B. Wright, Santa Rosa, Cal.

BREEDERS' SUPPLIES.

POULTRY feeds, POULTRY remedies, POULTRY supplies of all kinds. Send for catalogue and price list. CROLEY, 508 Sacramento St., San Francisco, Cal.

SHOEMAKER'S BOOK on POULTRY and Almanac for 1901. 160 pages, over 500 illustrations of Fowls, Incubators, Brooders, Poultry Houses, etc. How to raise chickens successfully, their care, diseases and remedies. Diagrams with full descriptions of Poultry houses. All about Incubators, Brooders and thoroughbred Fowls, with lowest prices. Price only 15 cents. C. C. SHOEMAKER, Box 134, Freeport, Ill.

"PASTEUR VACCINE"
SAVES CATTLE FROM
BLACK LEG
PASTEUR VACCINE COMPANY, Chicago.
Branches—Kansas City, Omaha, Ft. Worth, San Francisco.

THE LYNWOOD HERD OF SWINE
is still in the lead. Reports from the THREE GREAT FAIRS of the Pacific coast show that after meeting the best herds in California, Oregon and Washington, we can rightfully claim to have the Champion Herd of the coast. Look at the record: California State Fair, 15 ribbons; Oregon State Fair, 15 ribbons; San Francisco and San Mateo Fair, 20 ribbons, making a total of 53 ribbons. Our large sales to visitors to the fairs show what they thought of the stock, and we have very few salable pigs left. If you are in need of stock, write us and we will describe what we have.
SESSIONS & CO., 117 E. 23rd St., Los Angeles, Cal.

FEED BEGGARS and THEY'LL LAY FOR YOU.
FEED YOUR POULTRY WITH EMERY'S PURE MEAT MEAL and THEY'LL LAY FOR YOU.
This is the difference between profit and loss. If you don't believe it, just try it and see. CIRCULAR AND SAMPLES FREE.
(We want agents in every town on the Coast. If you are a hustler, this means you; if not, we are looking for your neighbor.)
EMERY FERTILIZER CO., INDIANA AND 24TH STS., SAN FRANCISCO, CAL.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING JAN. 8, 1901.

665,715.—VEHICLE TIRE — C. F. Allen, Hueneme, Cal.
665,847.—ANIMAL TRAP—R. M. Barton, Los Angeles, Cal.
665,728.—IRONING TABLE—H. C. Burch, Amity, Or.
665,670.—GASOLINE BURNER — H. B. Cary, Los Angeles, Cal.
665,509.—SEED POTATO CUTTER—Chrysler & Mills, Woodburn, Or.
665,596.—PRINTING BLOCK—L. D. Clark, Red Bluff, Cal.
665,773.—GOLD SAVING APPARATUS—F. J. Drake, S. F.
665,653.—ANTI-FRICTION BEARING—E. A. Faller, S. F.
665,735.—EARTH AUGER—N. H. Hansen, Westport, Wash.
665,853.—GAS GENERATOR—D. H. Hogue, Tacoma, Wash.
665,791.—MORTISING MACHINE—I. Lightner, Caliente, Cal.
665,745.—GAS GENERATOR—P. L. Linehan, San Jose, Cal.
665,746.—TOE CLIP TRIP—S. J. Madson, Newberg, Or.
665,614.—SOLE TRIMMER—E. F. Maxwell, S. F.
665,644.—CORSET STIFFENER — W. W. McCormick, Santa Rosa, Cal.
665,645.—SOFA BED—A. Schrock, S. F.
665,618.—CAN AND COVER—J. R. Scott, Oakland, Cal.
665,808.—SAW SET — I. Steele, Colby, Wash.
665,620.—TAILINGS SAMPLER—Stephens & Munger, Redding, Cal.
665,843.—CARRIAGE IRON—F. J. Wagner, Dallas, Or.
665,498.—EXHIBITOR — C. H. Wright, Eureka, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

STIFFENER FOR APPAREL CORSETS.—No. 665,644. Jan. 8, 1901. W. W. McCormick, Santa Rosa, Cal. This invention is designed to provide an improved stay, such as are used in the fitting of dresses and similar garments, and which cover the interior seams and are afterwards stitched on with any ornamental stitch, and suitably fixed in place. The object of this invention is to provide a convenient means for stitching or securing the stays in place, said means being integral with and forming a part of the stay itself. It consists of an interior elastic body, an outer covering of fibrous or woven material projecting beyond the edges of the body, lacing cords attached permanently thereto, and having tips by which they may be passed through the woven portion and stitched to the part where the stay is to be attached, said cords fastening together at their free ends, and a flap or covering adapted to fold over said fastened portions.

SOFA BED.—No. 665,645. Jan. 8, 1901. Amos Schrock, San Francisco, Cal. This invention provides for improvements in that class of furniture known as sofa beds, and allows a sofa or davenport to be transformed into a bed or couch. It consists of a base, a seat and back portion hinged to each other and to the rear of the base, and adapted to be opened about the latter connection and to be extended in a plane with each other. A section is hinged to the front of the base and provided with an open bottom to serve as a receptacle for bed clothing. This section lies within the base and is turnable outwardly about its hinges to stand in line with the other two sections, while foldable supporting legs serve for the extended sections.

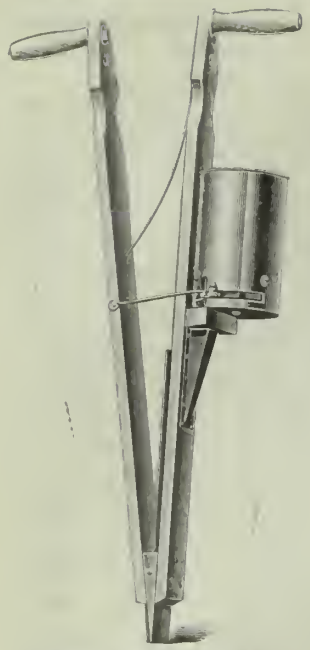
CAN AND COVER.—No. 665,618. Jan. 8, 1901. J. R. Scott, Oakland, Cal. Assignor of three-fifths to C. S. MacMullan and M. J. Keller of same place. The object of this invention is to provide improvements in cans and the covers therefor, so that when the cover is in position upon the can, and the latter enveloped in the usual label which encloses both the cover and can, it provides a ready means for separating the wrapper on the line between the can and the cover, so that the latter can be easily removed. It consists of a can body having an annularly depressed groove or channel removed from its upper edge, and a substantially tight cover having its corresponding groove or inwardly beveled portion at such a distance from the lower edge as to allow the latter to coincide with the groove of the can while the bevel of the cover rests upon the upper edge of the can.

HEAR THE CORN GROW!

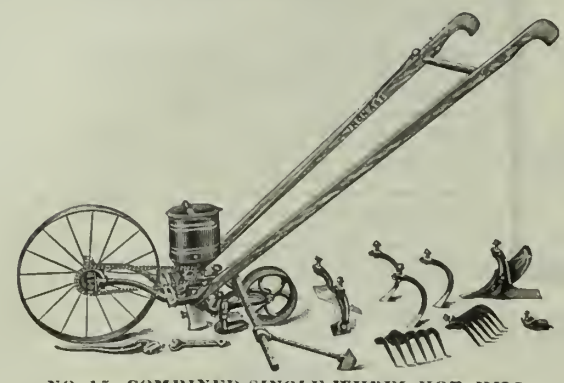
BAKER & HAMILTON, SAN FRANCISCO, CARRY THE BEST

CORN PLANTERS, HOES, DRILLS,

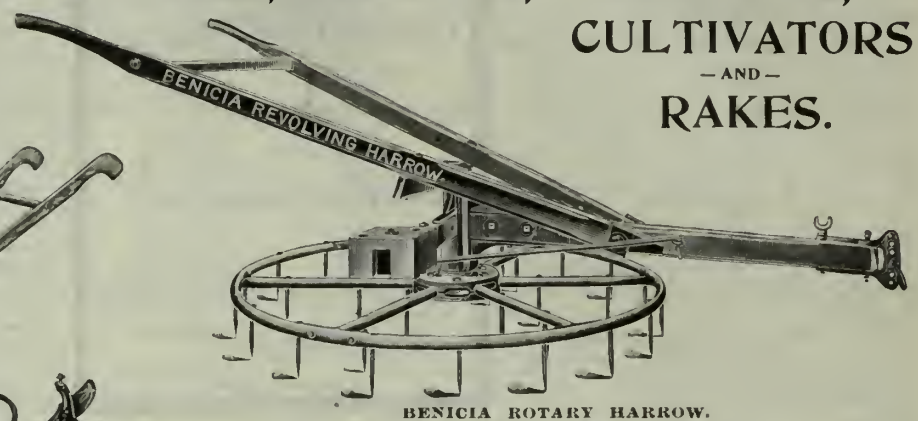
Garden Implements, HARROWS, CULTIVATORS —AND— RAKES.



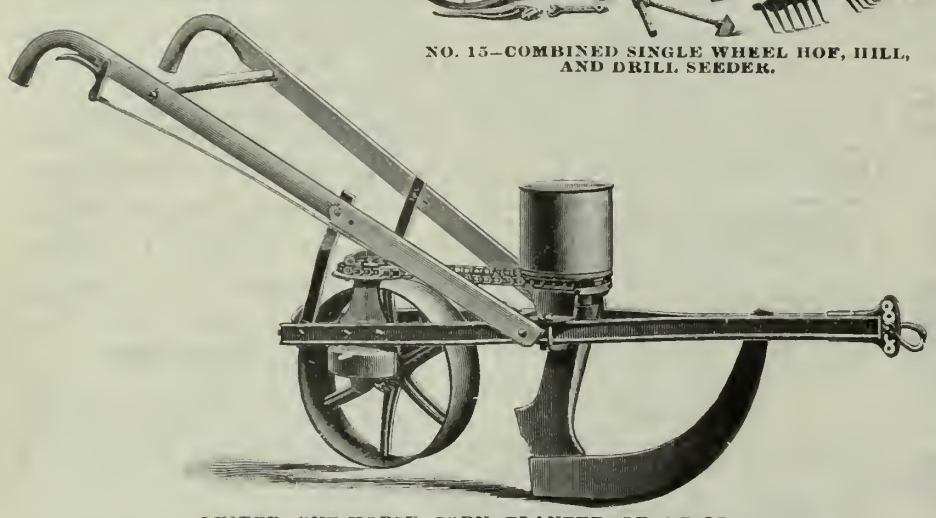
"SUPERB" ROTARY HAND CORN PLANTER.



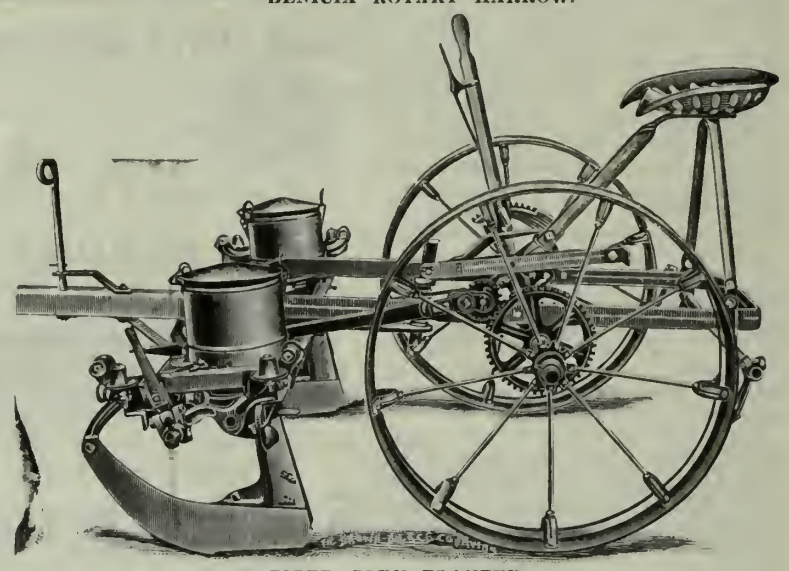
NO. 15—COMBINED SINGLE WHEEL HOE, HILL, AND DRILL SEEDER.



BENICIA ROTARY HARROW.



LESTER ONE-HORSE CORN PLANTER OR DRILL.



TIGER CORN PLANTER.

P&B ROOFING

ROOFING is to a building what clothing is to the body. It must protect and it must wear well. To put money in an interior and to save it on the roof of a building is poor economy.

P & B ROOFING possesses all the requirements of a first-class roof covering. It is waterproof, durable, inexpensive, easily laid. Ask your dealer for a circular, or address the makers.

PARAFFINE PAINT CO.,
116 BATTERY ST., SAN FRANCISCO.

CENTRIFUGAL PUMPS

FOR

IRRIGATING or DRAINING.

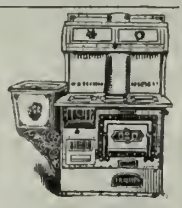
We guarantee the efficiency and durability of our pumps.

BYRON JACKSON MACHINE WORKS, - SAN FRANCISCO, CAL.

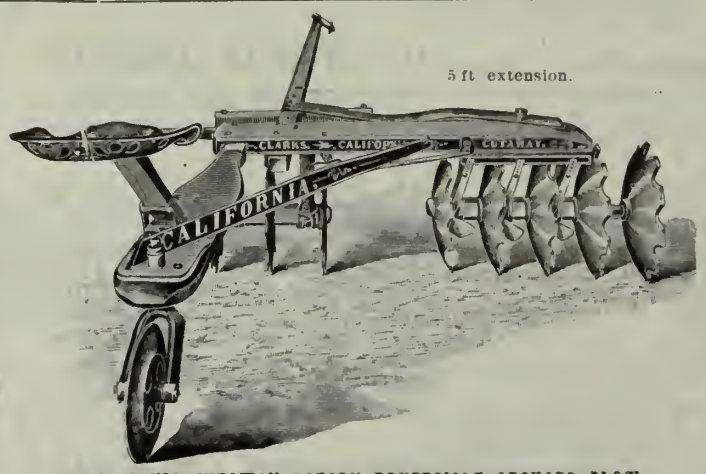
$50.00 RANGE FOR $25.00

TO INTRODUCE OUR

TRIUMPH STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. **Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.**



DEWEY, STRONG & CO., Patent Solicitors, 330 Market St., San Francisco, Cal.



2-Horse **PLOW** CUTS 22″ wide, 4″ to 8″ deep.

4-Horse, 36″ wide, same depth.

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PRICES ON APPLICATION.

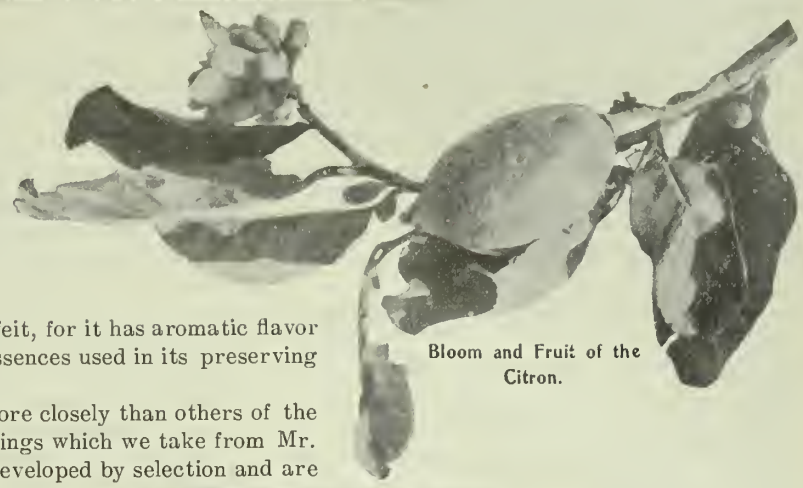
THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 5. SAN FRANCISCO, SATURDAY, FEBRUARY 2, 1901. THIRTIETH YEAR. Office, 330 Market St.

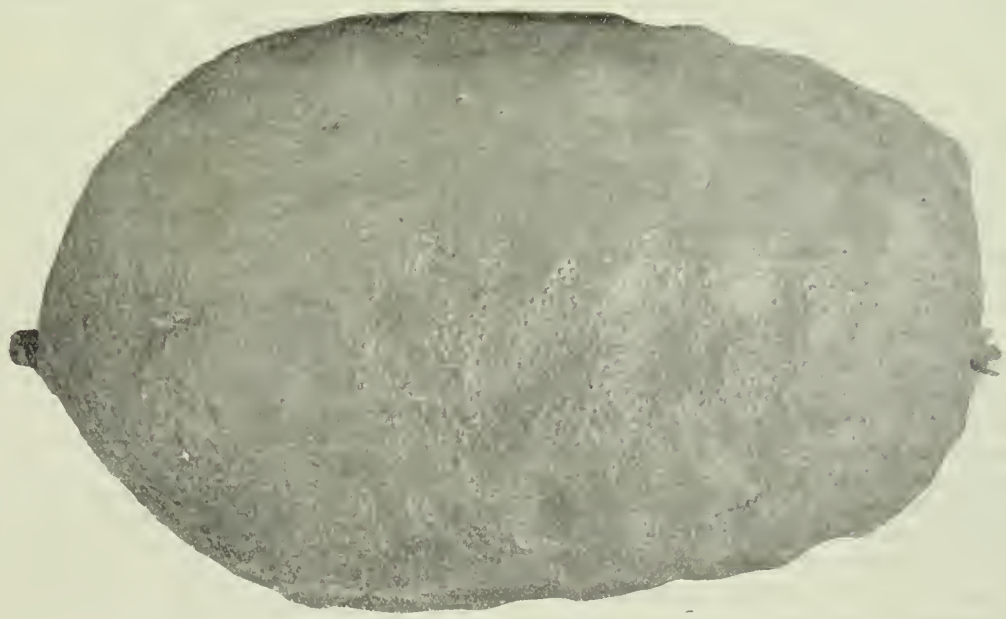
The Citron.

The keen interest in citrus fruit growing, to which we have frequently alluded of late, warrants a few words and a few pictures in the direction of the citron. There is some confusion in the minds of those who come to California from the north Atlantic States as to what the citron really is, for in that region the name signifies a degraded member of the watermelon family, the peel of which is made into preserve. The confusion is, in fact, of very old beginning, for it appears in the botanical name of the watermelon, which is citrullus. The true citron, however, is very different and is a member of the family of citrus fruits, and thus akin to the orange, lemon, etc., and the commercial product known as candied citron is the processed rind of a tree fruit and not the pulp of a melon. The true citron is incomparably better than its lowly counterfeit, for it has aromatic flavor and fragrance of its own, while the substitute is flavorless except as the sugar and essences used in its preserving may impart flavor to it.



Bloom and Fruit of the Citron.

The full name of the true citron is citrus medica cedra. It resembles the lemon more closely than others of the citrus family. The general appearance of the fruit and foliage is shown in the engravings which we take from Mr. Lelong's excellent report on citrus culture. There are varieties which have been developed by selection and are therefore better suited to the production of commercial citron than are the seedlings which, as with other fruits, are apt to revert to the wild type. Selection is made toward size as yielding a large, smooth skin of good thickness and sweet flavor, for this constitutes the desirable product, the pulp being rejected. Thus the improved citron, as shown on this page, has not the beauty of the wild fruit, also shown in the features, for it has a swollen and smooth outline instead of the ribbed and graceful outline of the original fruit; but citron growers are seeking dollars, and they prefer the swollen form, just as the pork growers prefer a hog which is the shape of a pork barrel rather than the picturesque and agile wild boar which our ancestors hunted in European forests. The cross-section shows how large a part of the fruit is composed of the rind, which is used in the preserving process.



The Sorrento Citron—Reduced One-third.

This process, as outlined by Mr. Lelong, consists in gathering the fruit when it is of good size without particular regard to color and placing it in brine for at least a month. The brine is renewed several times, and the fruit allowed to remain in it until required for use, often for a period of four or five months. When the citrons are to be candied they are taken from the barrels and boiled in fresh water to soften them. They are then cut into halves, the seed and pulp are removed, and the fruit is again immersed in cold water, soon becoming of a greenish color. After this it is placed in large earthen jars, covered with hot syrup, and allowed to stand about three weeks. During this time the strength of the syrup is gradually increased. The fruit is then put into boilers with crystallized sugar dissolved in a small quantity of water and cooked, then allowed to cool, and boiled again until it will take up no more sugar. It is then dried and packed in wooden boxes.

The production of citron has been mooted in California for many years, but little has been accomplished thus far. The best kinds of citrons have been introduced and several parties at the south have made a commendable product, which may ere long be multiplied. It is now proposed to use the rind of the surplus pomelos to make citron of exceptionally good flavor at Riverside. The world's supply at present comes from several points in the Mediterranean region—the best from Corsica. The United States is said to import about three million pounds per year. There is no duty on the product, so local growers would come directly into competition with the old world, and for a material which requires so much time and labor and investment in sugar that it might be a question as to the outlook.

Cross-Section of Citron.

The Common Citron.

Citrons are grown from seed or cuttings and can be budded as are other citrus fruits. The sweet orange is a good stock for the citron. The tree is susceptible to training, as is shown by the picture representing an ingenious French method of training and supporting the large, heavy fruit.

French Method of Training the Citron.

Is HAWAII rising in enterprise with the incoming of Americans? It is announced that another effort is being made to supply Honolulu with vegetables without calling upon California to ship them. H. M. Long, a Californian, is at the head of the scheme. He has made experiments and says he can grow vegetables at Waimea. At present Honolulu gets nearly all her vegetables from the Coast.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, February 2, 1901.

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The Week.

Conditions favoring agricultural activity continue in all parts of the State and all are awake to them. The back of the winter has broken and we are advancing rapidly into the blossoming period, with longer days, greater warmth and quicker growth. February is the first spring month in California. Our advices this week are particularly emphatic on the excellent character of the winter from the point of view of the valley stock grower. The abundant grass is leading to free investment in good blood and common stock to improve with it. There certainly has not been for several years so good a demand for breeding animals of all popular kinds. This will result in large increase of value in the personal property of the State and incidentally of the realty also. It is fair to expect some degree of recovery from the low values to which lands sank during the dark times of a few years ago. Capitalists are more freely investing in rural properties and this of itself shows that times have considerably changed.

Wheat is not doing much these days. Futures started up a few days ago, but have dropped back again, while spot trade has been slow and unchanged. Three cargoes of wheat have gone out and another shipload was chiefly barley, but some wheat. Barley is moving outward actively by Panama for Eastern brewing centers, and now there will be a cut rate by rail to move barley to the Mississippi valley points, which will hold good until the assessors catch up with the procession on March 1. Oats are strong; 500 tons of Eastern oats came by rail this week. Corn is a little firmer for Eastern. Beans are still strong and expecting Government purchases of white beans. Bran is still firm, with light stocks and a good demand. Other millstuffs are steady. Hay is the same as last week; choice sells fairly, but other grades are slow. Beef is received a little more freely, but the price keeps up well, though a shade easier for the highest priced. Mutton is firm and unchanged. Hogs are scarce and higher and expected to stay up until the crop of milk hogs shows up. Fine butter is in demand and no large supply, though common is abundant. Cheese is weak but not materially lower. Eggs are doing fairly, as all receipts are good and fresh, and the Eastern and cold storage eggs are now out of the way. Eastern poultry is still arriving freely, and all except large frying and broiling youngsters are depressed. Young pigeons are scarce and high. Potatoes are weak, except select lots; onions are slow and a little lower, but good stock still shows strength. There is a heavy supply of low-grade oranges and they are weak and lower. Lemons are no better than last week. Fancy apples are scarce and high and common are neglected. Little is doing in dried fruits—some peaches and pears have moved at low rates. The prune situation is not yet relieved, though outside lots have now been practically used up. Raisins are steady here, but reported weak at the East, and are not moving now. Almonds are slow and unchanged; the best walnuts are steady. A little wool is going East by water, but the market is unchanged. The wool market has been waiting since last fall for an opening, and now the talk is of waiting for the spring clip, which is expected to be very fine this time. It would not do to make a high price before that wool is coopered.

The available labor for fruit handling next summer is already being looked into. At the last convention of fruit growers in this city a committee was appointed to act in this line. A California employers' association will be formed. Membership lists are being circulated throughout the State, and it is expected that organization will be effected within a few weeks. The committee has been promised the assistance of the railroad companies, which will give special rates from the East to families wishing to avail themselves of the promise of nine months' work during the year. A circular which will be distributed east of the Rockies will tell of the climatic conditions and the prospects for those who will come to California. Only families will be induced to come. It is claimed that the population of the State has not kept pace with the rapidly developing resources, and that many enterprises are suffering.

It seems clear enough, from an investigation which is in progress at Sacramento this week, if, indeed, it was not sufficiently known before, that California was conspicuously misrepresented at the Paris Exposition. It is established by the admission of some of the commissioners themselves that they were chiefly occupied in having a high old time in revels and shameless gastronomic excesses at State cost, instead of making known to the world the resources and accomplishments of the State, as they were expected to do. It is not a surprise; for when people are selected to display the industrial achievements of the State who have no acquaintance whatever with such matters, but are prominent in very different affairs, it is not reasonable to expect from them good industrial exhibition work. When men, for instance, like Filcher of the State Board of Trade and Wiggin of the Los Angeles Chamber of Commerce, who know the State, what it is doing and what it can do, and know how to show the resources and results by years of experience, are not called to such work, but the places are given to a lot of men who neither know how to do the work nor how to behave when they are not doing it, we have only to expect failure and disgrace. The business, such as it was, is done, and is bad enough to make a Californian blush for his State; but there is little use talking about it further. We hope a lesson has been learned, and, though it has cost much, it may be a very valuable lesson.

Speaking about misrepresentation reminds one of another bogus affair, of somewhat more innocent kind, however, in which the name of California is to be taken in vain. It is announced that a great New York merchant is to reproduce in his establishment an ideal southern California scene, which will require a sufficient number of large rose bushes to cover a surface of 20,000 square feet. He has written to the Los Angeles Chamber of Commerce to know if it will be possible to secure 200 or 300 climbing rose bushes, ranging from 15 to 20 feet in length, without roots, leaves or flowers. The plants are to be used in an elaborate decoration scheme, and the leaves and flowers will be artificial. This is reproducing a California scene with a vengeance—dismembered branches of California rose trees with paper leaves and flowers!

We seem to be running along a line of falsification this week. California prune growers have been chagrined beyond measure by the work of a mendacious journal at the East which fabricated an interview with Judge Bond, president of the California Cured Fruit Association, in which Judge Bond is made to say that his Association is a failure. This is just the kind of news that certain Eastern parties desire to have current among Eastern dealers, so that they may hold aloof still longer in buying California prunes. It was a great play from a consciousless point of view. Of course, Judge Bond said no such thing. It is also true that he had no such interview with the journal which propagated the falsehood. It was simply a malicious whole-cloth lie told for a very definite purpose. What Judge Bond did say to a reporter was in this line:

The life of the Association is assured. It is as certain as our contracts with the growers. We have 3800 members, and they are all deeply interested in the Associatian and believe in the necessity for such an organization. There will be no new prunes until September. In the meantime we will be able to dispose of what we have on hand and will be ready for the next crop. Our preparations to handle this year's crop will be superior to our past arrangements, because we will know the situation in Europe and will have a better understanding with the trade in the East. The Association will be maintained, and, in fact, must be continued, as the property of the growers depends upon it. It will adapt itself to existing circumstances, and with each year of experience its position will be strengthened.

There seems no doubt about this. So far as we know the people they are strong in their front. There will be improvements, naturally, in methods but the general principle must be firmly adhered to or the prune interest will go to pieces.

One sign of "prosperity" at the East (and by prosperity in this case is meant longer purses and freer hands) is the larger consumption of wines. It is telegraphed from New York that there has been a decided increase in the consumption of California wines in the East, in this city in particular. In 1895 2,870,298 gallons entered the port of New York by water route; in 1899 there entered 3,639,113; last year 4,157,250. There is no corresponding decrease, however, in consumption of imported wines, the sale of which shows little variation. If more wine means more temperance, as some are claiming, then it ought to be shown that the amount of whisky used is decreasing. Such figures are not yet offered. The fact, however, aside from such questions, that the Eastern use of California wines has increased 45% in five years is of great industrial moment to this State and a warrant for the present awakened interest in vineyard planting on resistant roots.

The Grout bill, which prohibits the oleo men from dyeing their product yellow, is striking the oleo interest very hard, indeed. The bill has passed the House and has received the approval of a majority of the Senate Committee on Agriculture. This majority reports that it has listened with interest to the reports of the live stock interests and the cotton seed oil manufacturers, and is unable to see in the measure anything that can greatly injure either. It has heard some objection to this measure from organized labor, and while it is true that some laboring men prefer, as a matter of pride, to consume oleomargarine that is yellow instead of white, yet the committee believes that, while the pride of some may suffer under this measure, which will raise the tax in the colored and reduce it in the uncolored, a far greater number are now being deceived through the sale of oleomargarine as butter and at butter prices. The minority presented a substitute bill providing more stringent restrictions upon the retail dealer and for proper marking of oleomargarine, but removing the restriction as to coloring. The minority takes the position that the makers of butter cannot rightfully claim an exclusive right to use coloring matter. It now remains to be seen what the Senate will do. The measure has done all that its friends could expect of it so far, but it should be given all help possible in the Senate.

Oranges are going forward more rapidly than ever before even if the movement is reduced by lack of proper cars. The year's Eastern shipments are expected to reach over 20,000 carloads. From November 1st up to January 19th the Southern Pacific had shipped eastward from southern California 4400 carloads of oranges, and the same company has shipped out of northern California 850 carloads of oranges and lemons. These shipments for the early part of the season greatly exceed the output of any previous year.

QUERIES AND REPLIES.

Transplanting Old Trees.

To THE EDITOR:—When is the best time to transplant six-year-old olive trees? What precautions must be taken in changing them? I have two orchards partly filled and wish to make one whole orchard out of the two. Can five-year-old cypress trees be successfully transplanted? If so, how must they be handled?—NEW SUBSCRIBER, Lakeview, Riverside county.

These two kinds of trees can be successfully moved in about the same way and at the same time of the year. The time is after the cold weather is over and warm soil and other good growing conditions can be counted on. The trees will then be at the end of one of their dormant periods and ready to make new growth. In the case of the olives, reduce the top considerably—in fact, cut back pretty short. Dig a trench around so that the inner line shall be about 1½ feet from the trunk, carrying the trench down about 2 feet, cutting off cleanly all the roots encountered. Reduce the weight of the ball by removing the top soil down to the first roots. Then cut under the ball at the bottom of the trench, severing all roots. In this way the ball can be shaped so that it can be tilted a little so as to cut under and sever the tap roots. Make a strong sheet by sewing together sacks, double thickness, and by tilting the loose ball carefully get this under and drawn up tightly to the trunk. Then the ball can be lifted out onto a low truck or sled with a low derrick and tackle, or, if not too large trees, they may be lifted out with a long lever. Have the new hole ready beforehand, place the tree carefully at the same depth it grew before, pack the earth closely around the base of the ball, fill the hole nearly full and settle the ground with water, cover evenly with loose earth to hold the moisture below. Evergreen trees of considerable size can be safely transplanted in this way. In moving citrus trees it is sometimes desirable to remove the leaves and whitewash carefully to prevent sunburn. The olive tree will usually do with the foliage which remains after cutting back the top.

Windmill Irrigation.

To THE EDITOR:—Will a windmill, with 8-foot wheel, 12-inch stroke and 3-inch cylinder, supply enough water, from a well 52 feet deep, 25 feet of water in well and cylinder 25 feet below surface of ground, to irrigate half an acre of garden and half an acre of alfalfa? If not, how much ground will it sufficiently irrigate? The soil is generally loam.—H. J. WARRICK, Corning.

It depends, of course, upon how much wind you can count on to keep the mill going and how efficient the machinery is throughout. If the mill works well eight hours per day, it ought to lift, with the cylinder and stroke specified, enough water to cover an acre 2 inches deep every ten days. This would be enough for the crops mentioned, provided a tank was used to collect the water, so that a good head could be used—that is, volume enough to flow over a considerable surface. If everything is favorable in mill, wind, pump, soil and method of distribution, you might keep up satisfactory growth on a little more than an acre. There are too many conditions involved to give very definite answer.

Prunes or Eucalyptus.

To THE EDITOR:—I noticed in your issue of the 26th ult. a communication from "Orchardist" inquiring as to the merits of certain varieties of prunes, and stating that he intends to plant this spring ten acres of prune trees additional to what he already has. Has your correspondent considered the eucalyptus? They can be planted much closer together than prune trees; they require no pruning or cultivating, have no scale and make a fair quality of fuel. I have been burning apple-tree wood for some time past, which I estimate has cost me $30 or $40 a cord. Yet I think they are ahead of the prune for stove wood; but blue gum beats them both. Perhaps your correspondent intends to propagate the prune for its fruit. If so, I suppose he bases his action and judgment on a forecast that promises better conditions than at present prevail. Let us all hope and pray that his forecast is correct!—D. J. BROWN, Napa.

There is good ground for an argument that those who have soil, water and climate to produce a good-sized and well-cured prune should stay in the business or even extend their planting. There will be many orchards either made into firewood or neglected because of the low prices this year. Many such orchards should be abandoned unless they can be made to yield better fruit than they now yield. Many orchards in some parts of the State have already died out or been uprooted as unprofitable. It may be a decade before another prune crop will be produced like the one of 1900—if it is ever produced again in the same quantity and quality. We hope it never will be. So far as we can see, the outlook is just as good as it ever was for good fruit, and the way will be prepared for such fruit by the pinching out of low-grade product. With prunes it is a transition year both in production and marketing, and it is altogether unlikely that so many unfavorable conditions will again coincide. As for planting of any fruit, however, we never give advice. We simply give information in accordance with what we conceive to be the truth at the time. Each one must take his own business risks according to the best judgment he can form of the applicability of the facts to his conditions.

Watermelons Three Times and Out.

To THE EDITOR:—Can you inform me why watermelons, after being grown three seasons on the same ground, will not produce a good crop?—GROWER, Monterey.

Not exactly; it may be due to failing fertility; it may be due to multiplication of root pests in the soil. One could only tell by observation of the plants while growing what was the nature of their trouble. Rotation of garden vegetables is a very wise policy, and too many crops of the same kind should not be looked for, unless the soil is very rich and keeps free from insect life or the germs of plant diseases. The varieties frequently deteriorate and new ones should be secured; but that, we suppose, is not involved in our correspondent's case. If you have only one piece of ground for the melons, give it a good deep working and manuring, get seed of a new variety and try for three more good crops.

Seeds of Wild Flowers.

To THE EDITOR:—Can you give the address of someone in California who makes a specialty of growing wild flowers and from whom seeds may be purchased. —MRS. BONESTELL, 401 California St., S. F.

You can find seed of some very desirable California wild flowers by studying the catalogues of our leading San Francisco seedsmen for some of these plants have become very popular the world over. F. A. Miller, the seedsman and florist on Hayes street, has given much attention to this matter for the last thirty years or more. There are also collectors here and there through the State from whom rare things can be had. We publish your address so that such readers of the RURAL may write you what they have.

Coal Baskets for Frost Fighting.

To THE EDITOR:—Can you tell me where I can procure the iron baskets used for frost prevention? Can you inform me how they are made, the material used, as well as the size of the basket?—F. G. DEANE, Morgan Hill.

The baskets are cheap affairs of wire, about as large as your hat—much like the wire ox-muzzles or the wire hanging baskets of the florists. They have to hold about six or eight pounds of good soft coal and kindling enough to light it. They are hung to the limbs of the trees with a wire long enough to keep the fire at a safe distance from the bark. The basket and its charge of fuel costs about 10 cents, or the basket about half that. Perhaps some Riverside or other manufacturer will quote prices at address given.

Why They Object.

To THE EDITOR:—Please explain why the passage of the Grout bill would be detrimental to the cattle men?—A. J. CLARK, Petaluma.

Because oleomargarine is largely made of beef fat and anything which reduces the sale of oleo will also reduce the value of the slaughterer's by-product of beef fat and cause him to pay less for cattle. In this way the cattleman's ox is gored.

Root Knot.

To THE EDITOR:—Please tell me through your invaluable paper what is the cause of root knot on dormant bud peach trees, and remedy, if any.—NOVICE, Fresno county.

The cause of root knot on orchard trees was fully described and illustrated in our issues of May 5, 26 and June 2, 1900, and remedies have been given several times in these columns. The cause is a low-down fungus called a slime mold. The treatment, if the knot is not so large as to have seriously stunted the tree, is to remove it with a chisel or hatchet and paint the wound with Bordeaux mixture. If it is a young tree and a big knot, a new tree is usually the best recourse.

No Eucalypts for Missouri.

To THE EDITOR:—Do you think the blue gum would grow in the Ozark region of south Missiouri. I own a place there on which I desire to grow a score or more to protect from malaria. The thermometer goes to 10° below zero (Fahrenheit) there sometimes in the winter, but not often.—READER, Oakland.

You will have to stay in California if you wish to enjoy the eucalyptus. None of the large number of species is hardy enough to endure even a zero temperature—probably none will endure even 10° above zero. The blue gum has been killed to the ground, even though 40 feet high, by a temperature of about 15° above in the interior valley in this State. There are other eucalypts hardier than the blue gum but we cannot recommend any for Missouri.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 28, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature has continued slightly above normal during the week, and there have been no injurious frosts. Light rain has fallen at intervals, continuing up to Thursday in some sections. At Thermalito it was accompanied by thunder and lightning, and hail fell at Grand Island on the 24th. Farm work was suspended during the rainy days, but considerable progress was made toward the close of the week. The weather has been favorable for all crops; grain is in excellent condition, and making satisfactory growth. Feed on the foothill ranges is abundant, and cattle and sheep are in good condition. Trees and vines are thrifty. Farmers seem confident that heavy crops of grain, hay and fruit will be raised this season.

COAST AND BAY SECTIONS.

Conditions have been favorable for all crops during the week. Light showers have fallen in nearly all sections, and the temperature has been slightly above normal. Plowing and seeding are progressing rapidly, except on some of the lowlands, where the soil is too moist for working. Snow has fallen in the foothills near Eureka, and snow is said to be very deep in the mountains northwest of there. Grain is making good growth, and the outlook for a heavy crop is excellent. Feed is abundant, and cattle are in good condition. The weather has been very favorable for orchards, and all fruit trees are looking well.

SAN JOAQUIN VALLEY.

Nearly normal temperatures have prevailed during the week, and the weather has been clear, with bright sunshine, for several days. Light rain has fallen in nearly all parts of the valley. These conditions have been very favorable for crops, and have enabled farmers to continue plowing and seeding. Grain has made rapid growth and is in excellent condition. Alfalfa and pasturage have also made favorable progress. A large acreage of grain has been sown, and prospects for heavy crops were never better. Orchards and vineyards are looking well. Pruning is progressing.

SOUTHERN CALIFORNIA.

Warm weather has prevailed during the week, greatly benefiting growing crops and pasturage. Rain has fallen in nearly all sections, and was falling in Los Angeles this morning. The showers have been generally light in the valleys, continuing at intervals for several days, and have been very beneficial. In the foothill districts the precipitation has been heavier, amounting to more than 2 inches in some places. The soil is in excellent condition, and farm work is progressing. Grain is making rapid growth. Prospects are good for large crops of grain, hay and fruit. Another heavy rain would be beneficial to deciduous and citrus fruit trees.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Jan. 30, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.20	30 36	34 06	23.93	36	58
Red Bluff	T	15.13	15.07	14.82	36	70
Sacramento	T	11 32	16.53	11.32	36	60
San Francisco	T	13.01	14.47	13 31	42	62
Fresno	.24	7.45	6.13	5 05	34	60
Independence	.00	4 53	2.09	4 35	28	56
San Luis Obispo	.06	21.50	15.50	11.67	40	68
Los Angeles	1.05	9 26	4 57	9 22	44	68
San Diego	.61	3.80	2.62	5.14	48	64
Yuma	.06	.08	.66	2 07	40	74

HORTICULTURE.

Suggestions Concerning Date Growing.

California joins with Arizona in enduring interest in the great fruit palm of the old world. We have in previous issues given outlines of what Arizona is doing and something quite up to date comes in the form of a leaflet from the Arizona Experiment Station, prepared by Prof. A. J. McClatchie, the horticulturist of the station. It will be found to have many points applicable to the interior regions of California.

THE ARIZONA PRODUCT.—Dates being now grown in several parts of the Territory, and definite information as to their culture being lacking, it is deemed wise to furnish present and prospective growers with brief suggestions along this line. Letters received from various parts of Arizona and elsewhere indicate a growing demand for information relative to the culture of this fruit.

It seems to be now fairly well established that dates of a good quality and in commercial quantites can be produced in the warmer parts of Arizona. During the past year, three imported trees at the Experiment Station farm near Phœnix bore over 500 pounds, the fruit ripening between August and January. The portion placed upon the market sold at 25 cents per pound wholesale, at Phœnix. Thousands of pounds could have been sold at this price. Packed in neat labeled boxes, they retailed at 50 to 70 cents per pound.

The seedling date trees in various parts of the Territory bore last year 40 to 200 pounds per tree. Those of a good quality sold for 25 cents a pound wholesale, at Phœnix. For some years yet, the principal part of the dates grown in the region will be on seedling trees.

TO PROMOTE FRUITING.—To secure the setting of the fruit of date trees and to bring it to maturity, it is important that certain precautions be exercised. To begin with the winter season, trees should be permitted to remain without water and to keep as nearly dormant as possible during the coolest months, that they may be subjected to the damage of frost as little as possible. About the first of March irrigation may begin, water being applied copiously until the trees bloom. An abundance of water about the roots is said to stimulate blossoming. When they have put forth their cluster of blossoms, water should be withheld until the fruit has set.

POLLENATION.—In order to bring about the setting of the fruit it is essential that the female blossoms be pollenated. Date trees, unlike most other fruit trees, bear the two essential parts of the flowers on different trees. Hence it is necessary either that pollen-bearing trees be grown near fruit-bearing trees, or that pollen be brought to the latter. Last year a large quantity of dates failed to fill out properly because of a want of information on this point, or because of the inability of the owners of the trees to secure pollen at the proper time. If pollen-bearing trees do not grow within 30 or 40 feet of fruit-bearing ones, it will be necessary to cut away clusters of the pollen-bearing flowers and hang them in the fruit-bearing trees. This must be done very soon after the female flowers appear, or it will be too late for fertilization to take place. If pollenated too late, the result often is the development of a few of the later blossoming flowers, while the rest remain undeveloped and seedless. It is not necessary to depend upon the pollen produced the same year that it is desired to pollenate the female blossoms, since pollen may be kept from year to year and dusted upon the clusters of female flowers at the proper time.

After having made sure that the female flowers have been adequately pollenated, the date trees will require little attention, except occasional watering, for several months. As the dates approach their full size, it is important that the trees be supplied with an abundance of water, it being impossible to give them too much water from the time the fruit begins to ripen until it is fully matured. A good way to insure a thorough soaking of the soil about the roots of the trees is to make a basin 15 to 25 feet in diameter, by excavating some of the soil and throwing up a circular ridge, and then to fill this basin with water about once a week.

BAD BIRDS.—As the dates begin to ripen, they will be devoured by various species of birds, the cactus wren and the Gila woodpecker being the most destructive about Phœnix. In order to save their dates from these depredations, some have resorted to a procedure that has resulted in the wasting of much fruit—the removal of the clusters from the tree that they may be taken to a place of safety. Green dates once severed from the tree do not mature properly. In order that the tannic acid with which they are abundantly supplied may all change to the sugar that is so desirable and which causes them to be so delicious, it is neccessary that an abundance of water reach the fruit. And this cannot take place if the bunches are removed from the tree, and thus cut off from their water supply. If the ends of the cut stems are placed in a vessel of water and the clusters treated as a bouquet, the unripe dates will wither more slowly and more of them will come to maturity. Or the clusters may be enclosed in an air-tight box, and loss of moisture from the fruit thus checked, the water in the large stem commonly being sufficient to enable the necessary chemical changes to take place. But in no case will the flavor be equal to that of those ripening naturally upon the tree.

A better way to save the fruit from the ravages of birds is to cover the clusters with cheesecloth. This can be easily and cheaply done by making sacks of the proper size, slipping one over each cluster, and tying the mouth securely about the stem, the leaves that might interfere with the work being first cut away. Besides preventing the depredations of birds, this cover keeps off bees and other insects, and catches the ripe fruit as it falls.

DRYING DATES.—After being removed from the tree, dates require little treatment to preserve them. Most varieties contain sufficient sugar to keep them indefinitely. Those ripening during late summer and autumn may usually be packed at once, the need being to prevent them becoming so dry that they cannot be eaten. If, however, they are placed in air-tight receptacles, they will often mould some. Those ripening during late autumn may need a little drying before being packed away.

The greatest drawback to the preservation of dates is the work of larvæ that hatch from moth eggs deposited upon the fruit before it is packed. In our experience, untreated fruit is always ruined within a few months by these insects. The best preventative that has been found thus far is carbon bisulphide; but better methods of treatment will no doubt be developed as the industry becomes more important. To treat them with the bispulphide, they are placed in an air-tight box, a few ounces of the liquid poured into a dish sitting above the fruit, and a tight cover placed over all. In a few hours the cover may be removed and the gas permitted to escape, when the fruit will be ready to pack.

IMPORTED VARIETIES.—We still receive so many inquiries concerning the possibility of securing suckers from imported date trees, that it may be well to repeat what has already been stated in a previous bulletin—that there will be no suckers available from any American source for at least three or four years. The only source of these suckers at present is the date-growing regions of the Old World. The quickest way to secure dates at present is to plant seed. They may be planted at any time from now until next July, but will not germinate until warm weather comes. The seed may be planted where the plants are to remain, or the latter may be transplanted when a year old. Although adult trees endure considerable alkali, the experience of the past year at the date palm orchard south of Tempe, indicates date seeds will not germinate freely in alkaline soil, and that young seedlings are injured by the presence of much alkali. A fairly good place to plant the trees is along ditch banks, although the supply of water cannot be controlled there. As has been stated in previous bulletins, there is no certainty as to what the character of the fruit of these seedlings will be. Like that of the seedlings of most other fruits, it is pretty sure to be inferior to that of the established varieties. Besides this uncertainty, a half of the seedlings are likely to be males. The only way to secure date trees of a definite sex, bearing fruit of a definite character, is by suckers.

THE GARDEN.

An Early Garden.

Written for the PACIFIC RURAL PRESS by IRA W. ADAMS.

After a practical experience here of eighteen years in gardening I have come to the conclusion, taking one year with another, that February is the best time for one to start an early garden—that is, to sow your seeds where you intend the plants to grow. There are some kinds of vegetable seeds that can be sown very early in the fall, either in hot beds, cold frames or in raised beds in the open ground—for instance, onions and lettuce.

ONIONS AND LETTUCE.—I sowed two ounces of onion seed broadcast in one of my raised beds, 4x20 feet, on the 15th of last August, and transplanted them in October and first part of November. I now have a fine lot of young onions to sell, as well as to use in my family. I sowed lettuce seed at the same time and have had fine heads for some weeks past. I find that these two vegetables will stand about as much freezing weather, long-continued cold rains, and cold fog, as almost any other vegetable I know of, with the exception of, perhaps, a very few, one of which is mustard.

MUSTARD.—I am fully satisfied that the majority of persons who delight in an early garden do not know the real worth of mustard for very early greens. I have three varieties. I have not yet been able to decide which will prove to be the best, as I only raised what is called the "Large-Leaved" mustard last season. I am now raising the others and have quite a fine lot ready to be transplanted. I sow the seed in an open bed at the same time I do my onions and lettuce, and for a succession sow a few seeds every two or three weeks. The plants should be set out about 2 feet apart, as they make monstrous leaves, and grow very fast and rank, if the soil is made extremely rich, as it should be in order to raise them to perfection. I have been having these luscious greens for the past two months, and will continue to have them for two months to come. I am fully satisfied that it will pay to raise this variety of mustard (to say nothing of the other kinds) for poultry, as they are extremely fond of the tender leaves, and it is really surprising what a large amount a few hens will eat in a day. After the leaves have been cut from the stalk it will make a second growth, and a small third growth. This variety of mustard, with onion tops and mustard, makes a most complete green feed for poultry, especially where they are always confined.

TOMATOES.—In the PACIFIC RURAL PRESS of February 4, 1899, I wrote a short article about the good qualities of the "Honor Bright" tomato. I can still, as then, say: "I consider them a great acquisition, owing to their unusual solidity, as well as their crack-proof and remarkably long-keeping qualities, and I can conscientiously recommend them to PACIFIC RURAL PRESS readers as worthy of trial." I am satisfied that these tomatoes can be shipped to Europe without resorting to cold storage. I saved seed from my very choicest specimens last year, and shall plant a good-sized patch the coming season. I ate my last tomatoes January 10.

Bay State Home, Calistoga.

THE POULTRY YARD.

Feeding for Eggs.

Written for the PACIFIC RURAL PRESS by J. H. BARBER.

Proper feeding is just as essential to profitable management in poultry keeping as in any other branch of animal husbandry. Precisely as the contents of the dairyman's feed bucket regulate the contents of the milk pail and the cash balance at the creamery, so the composition of the ration fed to fowls is reflected in the egg basket. Progressive poultrymen realize this, and, consequently, there has arisen in recent years a desire for more exact knowledge of the best methods of poultry feeding. In response to this demand, several of the agricultural experiment stations have been conducting experiments along this line, and other stations will doubtless follow suit, as the demand for such information in other States increases and becomes well enough organized to make its importance felt. The data already obtained, however, throw much light on the subject; but, as most of the experiments have been made in Eastern States, the results have to be modified to suit Pacific coast conditions and markets. Of the various mill by-products used by Eastern feeders, many can not be had at all in our markets, while some of those we can obtain are relatively expensive feeds, especially to those remote from the large cities. We have, therefore, to make up our own rations from the materials available; but this is not difficult when once the general principles are understood.

NUTRITIVE RATIO.—Proper feeding is undoubtedly that which aims to supply the hen with the proper amounts—neither more nor less—of the different food elements she needs in order to perform to the best advantage the work expected of her. Over-feeding is plainly wasteful; under-feeding is false economy, since it defeats its own object. Feeding for flesh is one thing; feeding for eggs another. In this view, the most important points are clearly the total amount of food per day, and the nutritive ratio—in other words, the proportions of nitrogenous matter and of carbo-hydrates—to be included in the ration. The Agricultural Experiment Station of Rhode Island—the pioneer in scientific poultry investigation in this country—has suggested a daily ration per hen of 3.5 ounces total food, containing about 2.7 ounces of dry matter, with a nutritive ratio rather less than 1 to 4. This is for egg-producing breeds, averaging about 3.3 pounds weight per hen. Prof. Watson of the Pennsylvania Experiment Station, in Farmers' Bulletin No. 41 of the United States Department of Agriculture, also recommends a ratio of about 1 to 4. The New York station used for laying hens in one series of experiments ratios varying from 1:4.1 to to 1:4.7, and in another series from 1:3.3 to 1:3.7, with an average amount of about 2.5 ounces of dry matter per hen per day, not including green food. As the result of a number of feeding tests, the West Virginia station found rations approximating 1:5.5 better for egg production than wider rations. Lastly the Utah station, in experiments already noticed in these columns, showed that nutritive ratios of about 1 to 5 was most satisfactory, especially with Leghorns. As conditions in Utah more nearly approach those of the Pacific coast, further reference to these experiments may not be amiss.

UTAH EXPERIMENTS.—The Leghorns used in these tests, including pullets, one-year-olds and two-year-olds, averaged in weight throughout the year just about 3.3 pounds each. The average amount of food per hen per day (excluding green feed) was almost 3 ounces, containing about 2.5 ounces of dry matter. The nutritive ratios producing most eggs were 1 to

4.8 (157 eggs), 1 to 5.7 (158 eggs) and 1 to 4.9 (157 eggs). The food materials used were bran, ground oats, ground corn, wheat, oats, corn, sunflower seed, blood meal and ground bones, with cabbage and alfalfa for green feed and oyster shell for grit.

RATIONS FOR CALIFORNIA.—In the light of the above data, any poultryman may readily make up satisfactory rations from the food materials most available in his market. Probably 1 to 5 is a good tentative ratio for egg production in this State, to be varied according to results observed. Dr. D. E. Salmon, Chief of the Bureau of Animal Industry of the U. S. Department of Agriculture, is on record as saying that the nearer we approach a balanced ration, the better will be the results, both in egg production and in the health of the fowls. Now, 1:5 is very near the balanced ration (Wolff standard) for milch cows, the analogy between the cow producing milk and the hen producing eggs readily suggests itself, so we can not be very far wrong in taking 1 to 5 as a trial ratio, to be varied according to results, as said before. With this as a basis, then, let us consult the tables published in the annual reports of the Agricultural Experiment Station of the University of California, giving in detail the composition of California food materials. In most parts of the State the feeds most readily and cheaply to be had are wheat, barley, oats, bran and middlings, with blood meal or meat meal for animal food. Corn and corn meal are relatively expensive feeds here, both in food value and in price, and the oilcake meals, while cheap enough, reckoned by their food value, to those near San Francisco, are costly products, if one has to pay high freight rates on them. The writer, for instance, finds that $9 per ton freight from San Francisco puts cocoanut meal out of the question for people in his neighborhood. Chopped alfalfa hay may be advantageously used in the mash, if means of chopping it readily are at hand; its food value for egg production is greater than that of any of the cereal products mentioned above. Alfalfa, as green feed, will help out the ration also. Blood meal is probably the best form of concentrated animal food for poultry, as its composition, if a good article, is tolerably constant, while that of the various mixtures sold as "animal meal," "meat meal," etc., may be varied indefinitely. Moreover, the animal food is fed for its protein content, and blood meal is richest of all in this element, so necessary to economical egg production.

Suppose our food materials to be wheat, barley, bran and blood meal. Then a balanced ration for thirty Leghorn hens—about 100 pounds live weight—would consist of: Bran, one-half pound; barley, one-half pound; blood meal, one-quarter pound; wheat, four pounds; with the following approximate composition:

Material.	Amount. Lbs.	Dry Matter. Lbs.	Protein. Lbs.	Carbo-Hydrates, Etc. Lbs.
Bran	.50	.43	.07	.36
Barley	.50	.44	.06	.38
Blood meal	.25	.22	.20	...
Wheat	4.00	3.54	.45	3.12
Total	5.25	4.63	.78	3.86
	Ounces.	Ounces.	Ounce.	Ounces.
Per Hen	2.80	2.46	.42	2.04

Nutritive ratio.....1:5

The writer has fed a ration similar to this during the present winter with good results. The bran, barley and blood meal are fed as a warm mash in the morning, the barley being boiled a few minutes to soften the hull, and the bran and blood added, using just enough water (two quarts) to make a crumbly mash. A little salt and cayenne are added for seasoning, and occasionally a few table scraps. Should the scraps amount to much, proportionately less of the other feeds is used. One pound of wheat is fed at noon, together with all the green stuff (Australian salt bush) the fowls will eat, and the balance of the wheat about an hour before sunset. I would feed other grains for variety, but can not obtain them economically.

If oats and corn can be had cheaply, the ration might be made up as shown below:

Material.	Amount. Lbs.	Dry Matter. Lbs.	Protein. Lbs.	Carbo-Hydrates, Etc. Lbs.
Bran	.5	.43	.07	.36
Barley	.5	.44	.06	.38
Blood meal	.25	.22	.20	...
Wheat	2.00	1.77	.22	1.56
Oats	1.00	.89	.12	.79
Corn	1.00	.89	.10	84
Total	5.25	4.64	.77	3.93

Nutritive ratio.....1:51

With cocoanut meal, a feed much relished by fowls, the ration might be varied twice a week or more to the following:

Material.	Amount. Lbs.	Dry Matter. Lbs.	Protein. Lbs.	Carbo-Hydrates, Etc. Lbs.
Bran	.75	.64	.10	.54
C. C. meal	.25	.21	.05	.19
Blood meal	.25	.22	.20	...
Wheat	4.00	3.54	.45	3.12
Total	5.25	4.61	.80	3.85

Nutritive ratio.....1:4.8

Chopped alfalfa hay, with bran and blood meal, gives a ration as follows:

Material.	Amount. Lbs.	Dry Matter. Lbs.	Protein. Lbs.	Carbo-Hydrates, Etc. Lbs.
Bran	.5	.43	.07	.36
Alfalfa hay	.5	.45	.09	.34
Blood Meal	.25	.22	.20	...
Wheat	4.00	3.54	.45	3.12
Total	5.25	4.64	.81	3.82

Nutritive ratio.....1:4.7

Using skim milk instead of water in the mash gives, with alfalfa hay and cocoanut meal:

Material.	Amount. Lbs.	Dry Matter. Lbs.	Protein. Lbs.	Carbo-Hydrates, Etc. Lbs.
Skim milk (2 quarts)	4.00	.40	.12	.23
Alfalfa hay	1.00	.89	.17	.68
C. C. meal	.50	.42	.10	.37
Wheat	3.50	3.10	.39	2.73
Total		4.81	.78	4.01

Nutritive ratio.....1:5.1

A somewhat narrower ration, using skim milk, bran and blood, would be:

Material.	Amount. Lbs.	Dry Matter. Lbs.	Protein. Lbs.	Carbo-Hydrates, Etc. Lbs.
Skim milk (2 quarts)	4.00	.40	.12	.23
Bran	1.00	.87	.13	.72
Blood	.25	.22	.20	...
Wheat	4.00	3.54	.45	3.12
Total		5.03	.90	4.07

Nutritive ratio.....1:4.5

Other rations might be added, but enough has been said to give some idea of the principles of rational feeding, the basis of good poultry rations as demonstrated by experiment, and the method of making up rations on this basis from the food materials available, by means of the tables referred to above. It should be said here that the digestibility of foodstuffs by poultry has not yet been demonstrated, though experiments in this line were begun at the California Experiment Station last year. In the absence of exact data as to digestibility, the above rations have been calculated on the percentage composition of the foods, following in this the example of Mr. Dryden of the Utah Experiment Station. As stated above, any one can easily make up rations to suit from the foodstuffs at hand. Should any of such materials not be found in the tables, information as to their composition may be obtained from the experiment station at Berkeley.

GREEN FOOD.—Green food has not been included in the rations for several reasons. Chickens at large pick their green food a good part of the time, and when it is supplied them the fodders used are various, though alfalfa is coming more and more into use as the best of all. Australian salt bush (Atriplex semibaccata) is another excellent green fodder; it is relished by chickens, and gives a large and continuous yield without irrigation. If water is scarce, nothing is better to plant for chickens than salt bush. Where fowls are yarded, and the amount of green stuff fed is kept track of, it can be reckoned in the ration.

THE LARGER BREEDS.—The larger and heavier breeds, of course, require more food per head than the Leghorns. More is required for maintenance of the larger bird, as only the surplus nutriment over and above that required to sustain the body can be used in egg production. It is probable, however, that, weight for weight, no more food is required by Plymouth Rocks or Brahmas than by Leghorns; in other words, the amount of food necessary for 100 pounds live weight of Leghorns will at least suffice for the same weight of a larger breed.

University Experiment Substation, Paso Robles, Cal.

Is It Chicken Pox?

TO THE EDITOR:—Will you please tell us what is the matter with my fowls, and what to do for them? Their houses are whitewashed and roosts cleaned and saturated with coal oil often, and gas lime scattered freely on the earth floor; their feed is wheat, middlings, meat scraps and alfalfa. The disease first shows about the eyes—a white, frothy film, changing to a yellowish growth or scab, when the hens become blind. It often affects the mouth, so they are unable to close the bill on account of the scales or scabs in the mouth, when they become dumpish and die in a few days. Can it be the gas lime, which we have used but a short time? The trouble came on since using it. Will you suggest the cause and a remedy?—J. O. C., San Jose.

TO THE EDITOR:—Evidently neither the food given the fowls of your correspondent, J. O. C., nor the gas lime he uses in his poultry houses are responsible for the condition his hens are in. It is difficult to name the cause for the sickness he describes, especially so by one who has no opportunity to examine the surroundings.

The symptoms described indicate chicken pox. This disease will appear in some flocks in an unaccountable manner. An authority on poultry diseases says: "While the eruption (chicken pox) may appear on any part of the skin of the bird, we usually see it on the face or under sides of the wings. The eruption may extend to the eyeballs or appear directly on them, and may cause the loss of sight, if not the destruction of the eyeballs. The more numerous the sores or ulcers the more prominent the loss of appetite, strength and color.

"Chicken pox is known by the scabby ulcers appearing on any part of the body, but more often on the head and wing. The ulcers exude a liquid that is inclined to dry on the surface and present a scaly, dirty coating. Along with the coming of the eruption the bird shows more thirst than common and a slight rise of temperature.

"For the eruption there is nothing better than common carbolated vaseline. Feed a simple mash of at least one-third clover (or alfalfa) mixed with boiling milk. See that all damp, scratching material is removed and dry straw supplied in its place. The danger in this disease is exposure to cold and wet."

Napa, Cal. A. WARREN ROBINSON.

The New Egg Farm.

TO THE EDITOR:—In your book "The New Egg Farm" are there plans for building hen houses on a small scale—say that cost from $15 to $25, or 10x10 or 12x12, or some small dimensions? Please reply through the columns of the PACIFIC RURAL PRESS.—C. D. GUILFORD.

The book contains descriptions and pictures of all kinds of poultry structures, stationary and movable, large and small. It is very suggestive along all lines of handy devices and arrangements. And the price is only $1 per copy, postpaid.

FRUIT MARKETING.

How Long Will Overland Fruit Be En Route This Year.

TO THE EDITOR:—I rise for information. At the annual Fruit Growers' Convention, held in San Francisco last December, I made a motion that the convention instruct their transportation committee to call on the new president of the S. P. R. R. and endeavor to obtain for the year 1901 a time schedule on eastbound fruit traffic. On Mr. Naftzger's objecting to the committee being so instructed my motion was tabled. Later in the session Mr. Frank McKevitt brought in a series of resolutions more than covering the ground of my motion. These resolutions, I believe, passed unanimously. Now, sir, seeing that from the very nature of our business it is imperative that time must and should be the essence of our contracts with the S. P. R. R., I should like to hear, and I am sure all fruit growers would like to hear, from the chairman of that committee (Mr. Russ D. Stephens of Sacramento, I think) as to whether the instructions of the convention are already complied with, and what was the result of the interview with President Hays. I have a few acres of pears that have been a source of pleasure and pride to me; with the assistance of the S. P. R. R. I trust they may also prove a source of profit. The orchardist cannot convert pleasure and pride into bread and butter, and, if the S. P. R. R. swallow all the profit, the orchardist must needs forego his pleasure and pride in his pear trees.

Mr. Hays, as a reasonable man, must see that if, by delays on the part of the carriers, the goods carried are rendered valueless, it is impossible for shippers to continue in business. If no one can afford to ship, no one can afford to grow for shipment. As it is too long to wait for next December's convention I trust Mr. Stephens will be so kind as to let us hear through your columns the result of the committee's labors. EDWARD BERWICK.

Monterey, Jan. 26, 1901.

Mr. Stephens has the floor.

Photographs are shown of a collection of vegetables on the grounds of the Alaska Commercial Company at Forty Mile, and it is a pretty convincing exhibit that all the vegetables that come to maturity in Canada may be grown in the open air during the summer months on the Yukon.

The upper San Joaquin is going ahead with its honey interests. Four carloads of honey have already been shipped out of Tulare county for the season. Another car will be shipped in a few days. The total honey yield of the season was about seventy tons for that county.

WIRE NAILS will stand the weather test better than steel cut nails. The surface of wire nails is entirely smooth; that of the cut nail is rough on two sides, giving greater opportunity for collection and saturation of moisture. As between steel and iron there would be an advantage in using steel nails, as they are less liable to rust. The process of galvanizing nails after cut has been perfected, the use of the galvanized nail being advocated. It is desirable to use a small nail with extra large head, and nails galvanized after they are cut, not nails cut from galvanized wire, as on the latter the head and point are exposed and the coating is not as perfect as in the case of nails galvanized after cut.

IN 191 feet of 3-inch pipe there are 150 square feet of surface: $3 \times 3.1416 \times 12 \div 144 = .785$; $191 \times .785 = 150$.

Agricultural Review.

ALAMEDA.

BEGINNING TO BLOOM.—Niles Herald, Jan. 25: The acacia is sending forth its beautiful bloom in this vicinity and here and there are to be seen almond trees in full bloom. While it is quite early, crops of all kinds look promising. The hillside vegetable gardens have peas, beans and potatoes well advanced. If late cold snaps do not bother, the prospects are good for more than an average crop.

ACTIVITY AMONG VITICULTURISTS.—Livermore Herald: Although phylloxera has not decimated the vineyards of the Livermore valley as it has in less favored localities of the State, it has made its appearance in spots, and growers are preparing to take time by the forelock and employ the only remedy for the evil yet discovered—that is, by planting resistant stock. Julius Paul Smith of Olivina made arrangements before his recent departure for the East to plant 100 acres of new land in vines this season, and Manager Barker has ordered from West, the well-known Stockton grower, 50,000 cuttings of resistant stock. C. L. Crellin of Ruby Hill will also plant about twenty-five acres, using Riparia stock.

COLUSA.

NEW DISEASE AMONG HOGS.—Sun: Quite a number of farmers on Grand Island have for the past few weeks been losing their hogs by some new and strange disease. Chas. Burtis has only about thirty left out of a band of eighty. The hogs first commence to lose their hair and their skin becomes covered with spots, after which they drop off very rapidly. Another matter in regard to the hogs, which is causing complaint, is that some of the farmers do not take the precaution to bury their dead hogs, but allow them to lay in the fields or corrals where they die, and some places the odor is becoming almost unbearable; then other hogs are allowed to eat the remains of the dead. This will not only likely cause disease among the hogs, but is not the healthiest thing in the world for the people in that vicinity.

FRESNO.

PROSPERING THROUGH IRRIGATION.—Modesto Herald, Jan. 24: J. S. Brander reports that alfalfa, dairying, raisin and fruit growing have made Fowler a prosperous community. Mr. Brander is checking eighty acres for alfalfa, and recently purchased a herd of forty heifers brought in with others from Oregon and Washington by the San Joaquin Ice Co., a big creamery concern, and sold to the farmers at cost. Mr. Brander paid $22.50 per head, the herd including a young Jersey bull. Twenty and forty-acre farms are the rule down that way—in the irrigated belt.

LARGE SALE OF HOLSTEINS.—Fresno Democrat: Probably the largest sale of registered Holstein cattle that has ever taken place in the United States has been made at the famous Minnewawa farm, where 100 head of full bloods have been sold, consisting of fifty cows and the remainder calves and young stock, including three fine bulls. This fine herd consists of about 280 head and the sale of these choice full bloods will consist of some of the finest stock in the herd. No prices are named for publication, but, suffice it to say, only long prices could induce the sellers to part with such a large number of fancy bred dairy stock. It is not the purpose of this noted breeding farm to discontinue the breeding of fine cattle, but after the cold weather in the East other stock will be shipped here to fill the place of those sold. The purchaser was Charles D. Pierce, a wealthy gentleman of San Francisco, who will take them to his farm on the San Joaquin river, 4 miles from Stockton, where he has fitted up new barns and houses, and will make his place one of the finest in California.

ALFALFA SEEDING.—Reedley Exponent, Jan. 24: Few have any idea of the amount of land that will be planted to alfalfa this season within from 3 to 5 miles of Reedley. The thing is booming for the reason the land is adapted to this king of all the grass family. In Sections 11, 14, 16 and 21, Township 16 S., Range 23 E., all within the Windsor school district, there is already about 1000 acres seeded, or soon will be, as the forces are at work every day. Following are the names of those planting alfalfa and the acreage thus planted: O. S. Brewer has prepared and sown a large area, but expects to put in fully 200 acres; in Section 14 Andrew Winter has sown eighty acres; C. L. Knestric is at work sowing fifty acres; J. N. Patterson will sow from forty to sixty acres, as the time may permit; in Section 15 H. R. Peacock and G. M. Dopkins will put in sixty acres; G. V. and D. L. Reed have already sown eighty acres; Jasper Kolb will plant forty acres; L. L. Eldred, thirty acres; Mr. Menkins, thirty-five acres; John McBriar has eighty acres leveled and checked for the seed—in fact, much of it is already seeded; Deason & Clark will sow eighty acres, their land being now ready to seed; J. C. McCubbin will sow eighty acres, and is now at work with a force of men thoroughly preparing it for the seed; A. E. McClanahan and J. A. Boyd are each preparing forty acres and others will follow. The above, with what has been sown during the past two years, will amount to at least 1500 acres.

SACRAMENTO.

A GOOD YEAR.—TO THE EDITOR: I have never seen Sacramento county looking so well at this time of year. I never saw so good a winter for stock. It was a winter of grass. There is a good demand for stock of all kinds. Berkshires are in good request. The time has come when one must keep stock to farm successfully. —THOS. WAITE, Perkins.

SAN DIEGO.

ORANGE SHIPPING QUIET.—San Diego Union, Jan. 24: Orange shipping from this and all other sections of southern California is not active at the present time. The reasons for this are the scarcity of satisfactory orders and unsatisfactory prices. The packers are devoting their attention to packing lemons, for which there is a little market. This lull in the orange shipments will give the fruit an opportunity to ripen more thoroughly. The large amount of fruit shipped East before the holidays has had the expected effect to rather stagnate the market and keep it down for a time, but the growers and shippers of the city are looking forward to better times, and that soon. The shipments of citrus fruit from southern California up to the present time for the season far surpasses any previous record, the figures reaching close to 3500 cars. The recent rain had something to do with the lull in shipments, but the main causes are those stated above.

LEMONS HELPED BY RECENT RAINS.—San Diego Union, Jan. 24: The recent rain had a good effect on the lemon crop of this county in brightening up the trees and fruit and in making irrigation unnecessary for the present, at least. Although it was only one rain of many that are needed during the winter season, it came at just the right time to do much good. The lemon trees of the county, especially those in the Chula Vista section, are making a very fine growth and presenting a fine appearance.

SANTA BARBARA.

WALNUT ROOT ROT.—Santa Barbara Press: Mr. Cadwell reported at the Horticultural Society meeting that he was cutting down the walnut trees in his orchard on account of root rot, which brought forth considerable discussion. J. McTear thought the disease was the result of old wood and decaying roots left in the soil, as they formed a nursery for the fungus that caused the trouble. W. H. Morse stated that the fungus attacked the trees and shrubs close to the ground and developed itself in the inner bark of the tree and then extended to the roots, death being delayed for a year or two, but finally claimed its victim. He also stated that the fungus was not particular as to the species of the tree attacked. Mr. Kahles reported a communication from Florida, and gave the treatment they were experimenting with, but all were of the opinion that it was an important question and needed a good microscopist to work on it, as it was of vital importance to the fruit growers.

SANTA CLARA.

NEW POTATOES IN JANUARY.—San Jose Mercury, Jan. 21: Gilbert Iverson, who has a ranch near the summit of the Santa Cruz mountains, last summer planted a few potatoes, Burbank variety, as an experiment to see when he could produce early potatoes. The vines grew well, but the late heavy frosts destroyed them; he dug his potatoes and from the little patch he had planted obtained 500 pounds, most of them being about the size of hens' eggs.

FOOD VALUE OF PRUNES.—The following is taken from a recent paper by Dr. W. D. McDougall: The prune is not only valuable as a food for human beings, but the small, unmarketable fruit can be utilized with profit by turning it into pork. Judgment must be used, however, in feeding prunes to hogs. When your swine are ready to fatten for the market, feed them three parts of prunes to one part of corn meal, with enough swill or water added to make a thin paste. Boil first in a cauldron from twenty to thirty minutes. This, fed with judgment, will increase the weight of your hogs from 75% to 100% in six or seven weeks, and will make firm, good pork.

SONOMA.

SONOMA'S WINTER FRUIT.—Healdsburg Tribune, Jan. 24: George Madeira sent to this office on Friday last several young pears of considerable size, plucked from trees on the Hendricks place on the hill lands about 2 miles northwest of Skaggs Springs. The trees bloomed last fall and the fruit will ripen in April or first of May. Little or no frost falls on the Hendricks ranch, which is located 200 or 300 feet above the sea and in the thermal belt. There are locations in the Coast mountains on the south slopes of elevated lands where frost is unknown. At no distant day the finest of oranges, lemons and olives will be successfully grown on these mountain ranches.

THE BAD COYOTES.—Santa Rosa Press Democrat: Lester Seawell reports that coyotes have been making disastrous inroads among the sheepfolds on the Seawell ranch and adjoining ranches. About 200 fine, fat lambs have been killed by the coyotes during the past month or so on the Seawell place. A $20 gold piece at least, probably more, can be earned for the scalp of a coyote, so desirous is everybody of ridding the country of the pests. The county also allows a bounty of $5.

HINTS TO BERRY GROWERS.—Sebastopol Times: A. F. Scheidecker, the well-known nurseryman and fruit grower of Vine Hill, in discussing the blackberry situation, advances a few hints that should be seriously considered by growers. It is his opinion that the producers should not sign any ten-year contracts, because by doing so they would be working against their interests. Mr. Scheidecker says that the blackberry growers of Analy Township control the output of berries in northern California, and if they will combine they can secure good prices year after year without contracting before the berries are ready for the market. Some packers are now offering to contract for ten years at $32.50 and $35 per ton, but Mr. Scheidecker believes that by holding out the growers can secure more satisfactory figures. T. E. Barlow, one of the most extensive blackberry growers in this township, is also against the signing of ten-year contracts, his views being similar to those of Mr. Scheidecker. He stated to-day that during the past week a San Francisco party has been circulating among the growers of this locality, offering $40 per ton for next season's crop, and in view of this fact he thinks it would be unwise to contract for $35 per ton for a period of ten years.

TEHAMA.

HEAVY POTATO YIELD.—Red Bluff People's Cause, Jan. 26: In the culture of the succulent tuber—otherwise Irish potato—Battle Creek excels. From a field aggregating twenty acres were harvested over 2000 sacks. The potatoes were mostly of the Oregon Burbank variety, grown on soil well irrigated from the abundant water furnished from the creek. There have been some extraordinary specimens, such as eleven potatoes weighing eighteen pounds, two sacks containing 212 potatoes weighing 209 pounds, and last, but not by any means least, an irregular shaped beauty weighing five pounds. This potato is one of a late planted crop of Oregon Burbanks and from one acre of the patch were harvested 150 sacks.

TULARE.

FIRECRACKERS KEEP OFF COYOTES.—Tulare Advance: Mr. Brazil, an extensive sheep raiser, living southeast of town, has been troubled by the coyotes, four or five men being necessary to guard each band of sheep from them. Mr. Brazil has been using a Winchester pretty freely upon them; but this is expensive, and he has struck upon another plan which seems to be almost as effective and a great deal cheaper. Every other night he goes around the ranch and fires firecrackers. He finds the noise and the smell of the powder are sufficient to keep the coyotes away for a couple of days. He has tried the experiment several times and it has proved a success.

LARGE APPLE CROP.—Visalia Delta, Jan. 24: Walter Hammond, who has a twenty-acre apple orchard in the hills above Badger, is doing well on his little ranch. His apple crop this year is thirty-five tons. Mountain apples never fail to command a good price and are always salable. Mr. Hammond's trees are seven or eight years old.

CATTLE GROWERS ORGANIZE.—Hanford Journal, Jan. 22: The cattle growers of the San Joaquin valley met in Visalia last Saturday to organize an association for central California. There was a large attendance. Charles Adams of Visalia was elected president: Susman Mitchell (Visalia) and Curtis Vise (Reedley), vice-presidents; V. D. Knupp of Porterville, secretary; T. A. Elliott, E. O. Larkins and Bert Murray, committee on by-laws. The association adjourned to meet at Fresno on Feb. 2nd.

YOLO.

CATTLE FROM ARIZONA.—Vacaville Reportor: A train load of cattle passed through Vacaville Monday en route to Winters. There were 1000 head on board and they were shipped from Arizona, where the feed is short. From Winters the cattle were shipped to the Phelan ranch, in the northern part of Berryessa valley. One of the men in charge of the cattle stated that over 30,000 head had been shipped from Arizona to northern California within the past month.

FRUIT PRODUCTION OF CAPAY VALLEY.—Woodland Democrat: The dried fruit in the hands of producers in Capay valley is about 100,000 pounds. The shipments from Guinda during the year 1900 were as follows: Fresh fruit, 1,562,312 pounds, including 838,677 pounds plums and 253,089 pounds peaches; dried fruit, 848,292 pounds, including 460,182 pounds apricots and peaches; total shipped, 848,292 pounds; on hand, 100,000 pounds; total product, 2,510,604 pounds. The valley also produces considerable citrus fruit, the quality of which compares favorably with the Oroville and Los Angeles oranges. The above showing makes the entire fruit output of Capay valley last season 251 carloads. Of course, most of the orange orchards are young and unproductive as yet.

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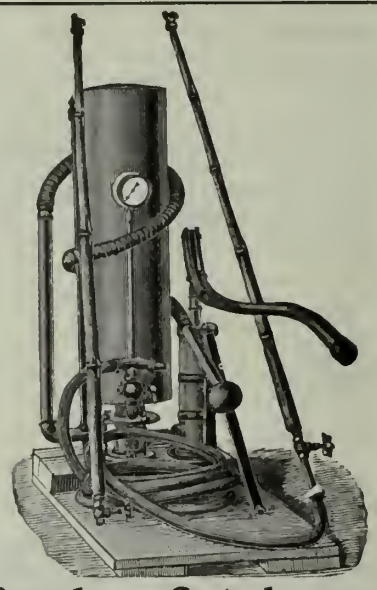

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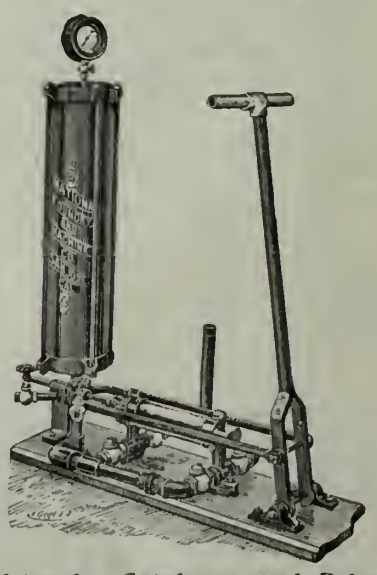

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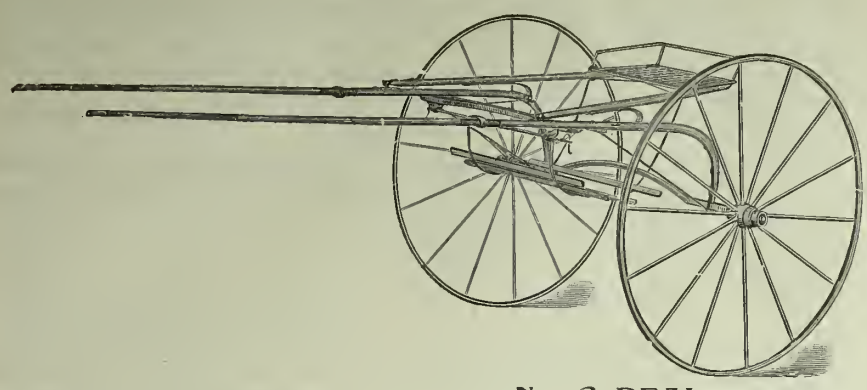

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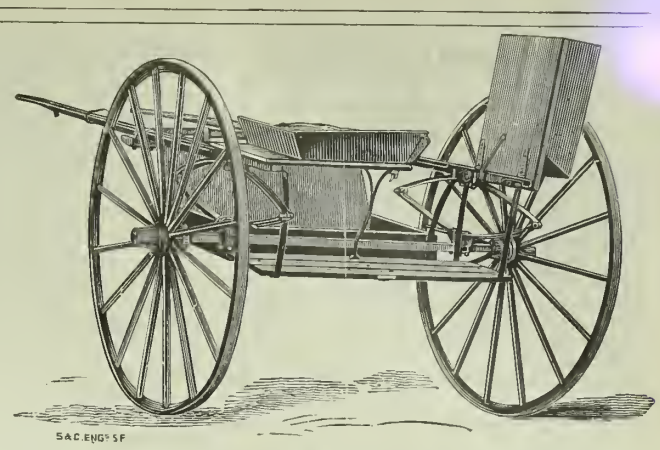

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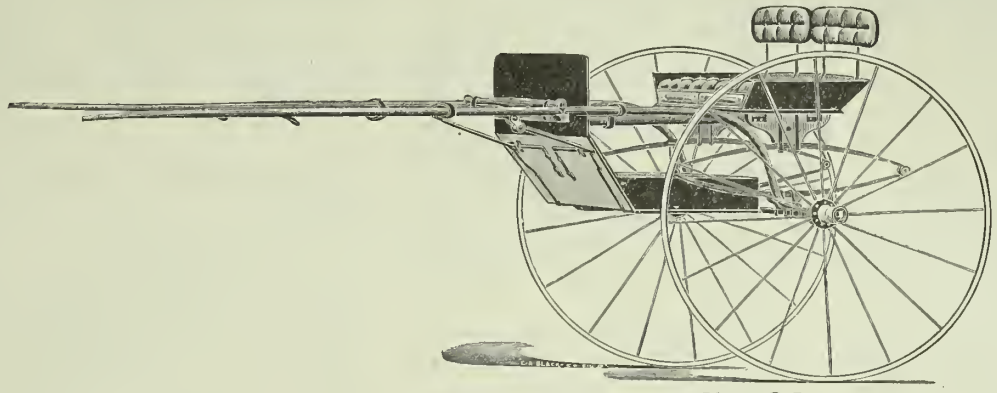

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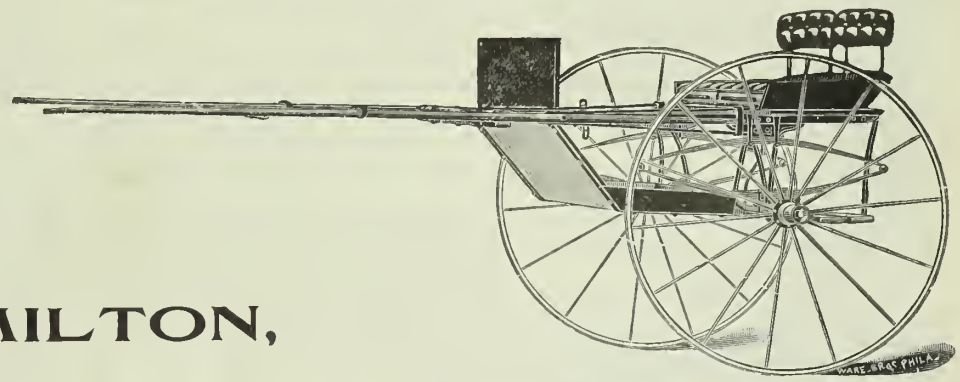

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with a crank on it would be just about as effective as the average milk tester after a few months' use. Why? Because there will be about as many holes in each. Tin is not the correct material of which to make milk testers.

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as its name indicates, is made absolutely without tin or galvanized parts. It is made entirely of cast iron, steel and bronze. Should a bottle break and scatter the acid, there is nothing to rust. Gears are cut from solid phosphor bronze; they run easy and last always. Made in five sizes, holding 4, 6, 8, 10 and 12 bottles. Geared high—one revolution of the handle makes many revolutions of the test. All enclosed in solid cast iron frame. No danger of flying acid in breakage. Our shops repair all kinds of separators and dairy and creamery machinery promptly. Send for free catalog No. 70

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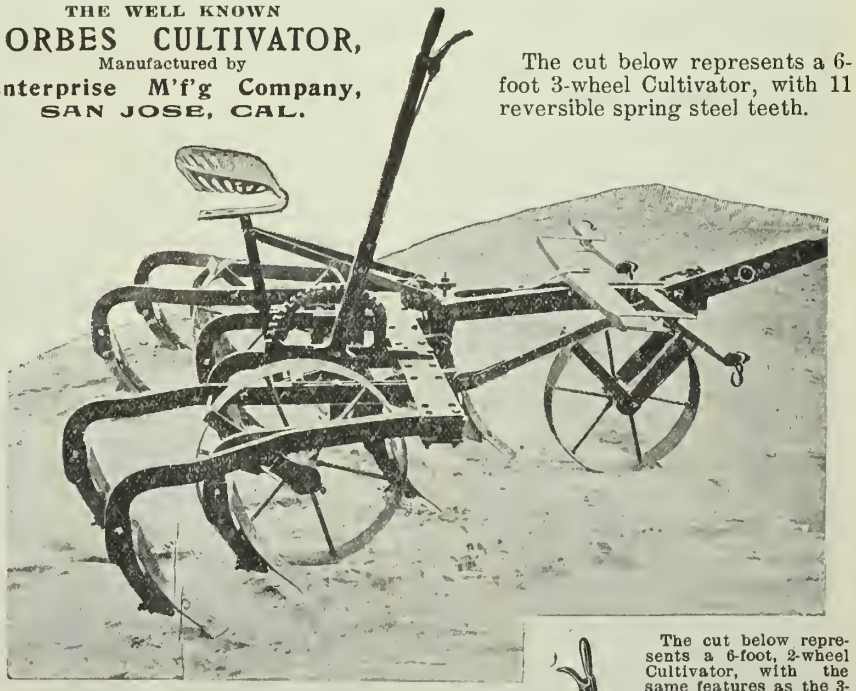
The cut below represents a 6-foot 3-wheel Cultivator, with 11 reversible spring steel teeth.



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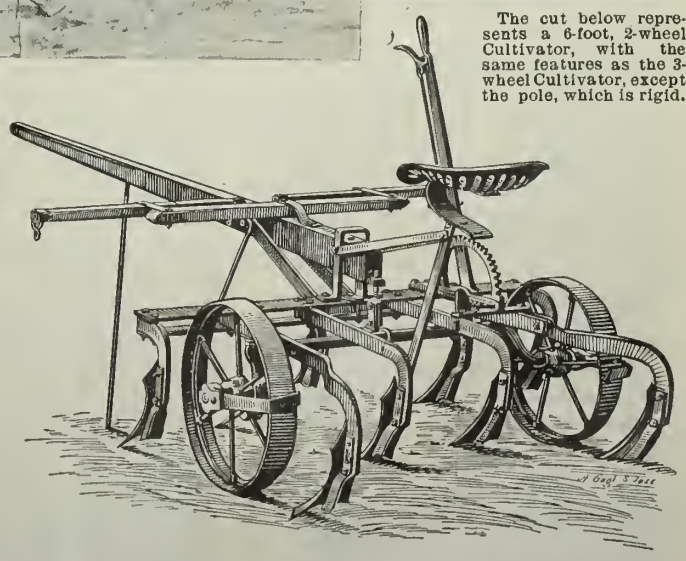

DEWEY, STRONG & CO., Patent Solicitors, 330 Market St., San Francisco, Cal.

THE HOME CIRCLE.

The Stars.

Once, lying on a bed of juniper,
I watched the passing of a northern light
That stole, a pale and shadowy eremite,
From the dark mystery of pine and fir
And, leaping upward from the mountain's spur,
With tenuous fingers waged celestial fight
To snatch the star-gold blossoms from their height;
Then, failing, waned into the things that were.
So we, with passioned strife or anguished wait,
Reach eager hands toward those unseen bars,
Like children at some noble pleasaunce gate,
Seeking the untold glory of the stars
Ever inscrutable inviolate,
That view our deadly wounds, our cruel scars.
—Marguerite Merrington, in Scribner's.

Love's Strategy.

I.

The girl was looking out of the window, humming softly, with a fine air of indifference. The man was leaning his back against the mantlepiece, gloomily observing the points of his boots.

They were good boots, but hardly worth the amount of serious observation he was giving them. To any person of moderate understanding the situation was obvious. To the two actors in it it was becoming embarrassing. The man moved first.

"You are sure your mind is made up, Georgie?"

The girl stopped humming abruptly, and turned round.

"What is the good of beginning again?" she said, with an impatient movement. "You know one cannot serve two masters. I am going to give my life to my art."

"But, Georgie"—and the man made an appealing gesture, for it was difficult to speak of such things to this girl—"you know what it means to me? I mean you know I could never change or forget?"

"Why not?" she returned quickly. "That is just what I wanted to speak to you about. You see"—and her proud head was raised a trifle higher—"you only want a wife who can see that you get a good dinner every day, and sew the buttons on your shirts. You have known us all for years. Why do you except me, the unpractical one of the family, to snatch at the offer of this post? You would have shown more sense in asking Madge or Lilian; and I dare say one of them might have had you."

For a moment there was a dangerous gleam in his eyes; but it changed to a tender look of amusement as the girl flung herself viciously into a chair, with the air of a sulky child.

"I suppose it would have been more sensible," he agreed; "only I didn't love either Madge or Lilian. If you will only have me," he continued, a twinkle in his eye and abject humility in his voice, "I will do my best to overcome my disagreeable appetite, and dine off a sentimental song, if you deem it best. I will also look out for some patent shirt-fasteners, which will save you the trouble of sewing on buttons."

Georgie looked up quickly.

"You needn't try to be funny, Rex!" she said severely. "You know quite well I should have to become a domesticated woman if I married; and I won't! I am going to devote my life to music; and if I were to sacrifice that and marry you, I should stop loving you in a fortnight, and hate you in a month. There; that's all!"

Rex looked up quickly.

"You would stop loving me a in fortnight?" he asked. "Then I may infer you have begun already?"

"You may infer nothing, sir!" she retorted sharply, but her face was crimson.

"By Jove! that's the nearest I've ever got!" thought Rex. "I believe she does half like me; but I must make her cave in before she'll respect me."

There was a moment's pause; then he said gently:

"I beg your pardon, Georgie. I believe you many be right, after all, though it is hard to think of giving you up." And he sighed softly but resignedly. "If you are not too angry with me, will you tell me which you think it would be best for me to try and like—Lilian or Madge?"

"I am so glad, Rex, you are sensible at last! Really, I have thought it out carefully; and, though Lilian is awfully sweet, and—and everything, I think Madge is the one best suited to you. You see, she cooks splendidly, and knows exactly how everything ought to be done in a house, and would be perfectly satisfied if you kissed her once a month, or so, and occasionally said the dinner was excellent. She really would; she is so easily pleased. While I—— Well, you know what I am."

"Yes; I know what you are," he replied quietly. You are very young."

She misunderstood him, as he had intended she should, and assented eagerly.

"Yes; I am young—only nineteen, and you are nearly thirty. Madge is nearest to you in age; and I believe you could make her love you if you tried."

"Shall I try? Do you want me to?"

"Yes, of course I want you to. It is for your own sake. She would make you a better wife than I, because I don't want even to be loved. I am satisfied with my life as it is."

"All right, Georgie. In a month I shall have made up my mind, and I will tell you. Good-bye."

"Good-bye," she murmured, vaguely afraid of what she had done.

She sat down with a sight of relief at her beloved piano, for which she had just resigned—what? Only a post as housekeeper? Of course, that was all. But, at any rate, it had had a bad effect on her nerves, for the notes seemed to jangle and clash inharmoniously; and at last she gave it up with a shudder, and a feeling that she should not care if she never played a note again. She tried to reason out the cause of her depression; but it seemed to have no cause, and with a lagging step she made her way to the sunny den which she shared with her sisters.

Madge was sitting there alone, sewing and singing gaily. She looked up with a smile as Georgie entered, and an unusal merriment danced in her eyes.

"Guess who's been here?" exclaimed Madge.

"Who?"

"Rex! And he's got a box for 'The Loves of Henrietta' to-morrow, and he's asked mother and I to go."

"I'm so glad," said Georgie, but with singular want of enthusiasm.

And Madge stole a furtive look at her and the corners of her mouth quivered.

II.

A month had passed. Once more Georgie stood at the same window, softly humming. She was waiting for Rex, and her face was very pale. It was the same face still, but there was a difference—the difference which marks every girl's face when she becomes a woman.

She had learnt her lesson and borne her punishment in silence.

To-day she had nerved herself for a supreme effort, that she might do no wrong to the sister who had stepped into the place she had voluntarily resigned.

She had thought love worth the sacrifice of art, and if art, without love, had turned to dust and ashes in her hand, who was to blame but herself?

She was waiting for Rex—Rex, who had fallen such a helpless victim to Madge that he had had scarcely a look or a word to spare for her the whole month. It was this that had first taught her what she had lost, and that had afterwards nerved her to play her part—for a week's experience had taught her it was only a part—of careless indifference and entire absorption in her art.

When it seemed too hard for her, she reminded herself sternly of her own words—"I am satisfied with my life as it is."

"They shall never see I am not satisfied," she said, and struggled on.

To-day there was a set, stern look on her face, for this was to be the supreme ordeal, and at present there was no one to see her. But as she leaned her head listlessly against the window there came from the hall the sound of a familiar whistle, and instantly her expression changed. A smiling, expectant face greeted Rex as he entered, and she scrutinized him with playful anxiety.

"The funeral and wedding marches are side by side on the piano," she began, with an affected attempt at seriousness; "but I was waiting to choose between them till I had seen your face."

"What does my face tell you?" he asked.

She looked at him critically.

"That the momentous question is to be asked no later than this evening," she replied. "Good luck attend you!"

"Wrong. Try again."

"Is it possible it is to be postponed till to-morrow morning?" And she held out her hand with a playful gesture of sympathy.

"Wrong again. I see I must tell you."

He had seized the hand she had offered, and was looking her straight in the face.

"What do you say to the question having been asked already?"

The last month had wrought many changes in Georgie. She had, for one thing, learnt to keep her face under control, and only the slightest trembling of the eyelid showed that she was taken by surprise. It seemed hard, therefore, that even this should be noticed. She knew at once that he had noticed it; but it should not make her abandon the position.

"My dear brother-to-be," she said, regaining possession of her hand, "I consider I have been grossly ill-treated in having this fact sprung upon me so suddenly. I had heard of a delightful little book entitled 'The Right Word in the Right Place'—a help to those people born devoid of tact. I was going to purchase it, in the assurance that I should find a paragraph entitled 'What to say to a future brother-in-law,' or words to that effect; and now you pounce upon me like this and crush me. I feel unfit for conversation. You had better go." And she turned majestically away.

"I will. Only you must first allow me to make one remark. You did not ask what Madge said to me." He paused impressively. "She has refused me."

It was his trump card, and he was growing desperate. He took advantage of Georgie's back being still turned towards him, and, creeping softly behind, took one glance at her face before she knew he had moved.

It was enough.

"Georgie," he cried, hasn't the play gone far enough? I am tired of acting; and I want you, Georgie—I can't tell you how much I want you!" There was passionate entreaty in his voice.

"What did you mean," she asked slowly, "by saying you were 'tired of acting'? I don't understand."

"No; I know" he answered guiltily. "I've got to tell you. Madge and I have been playing at being lovers during the last month. I have even asked her to marry me, and she has refused. It was the natural climax to the play, she said; and she told me to do it, because nothing else would put you off your guard. I had to know whether you loved me or not," he ended desperately.

"It was very cruel," she whispered at last.

"Ah, Georgie, don't!" he entreated.

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"I thought of that; but, honestly, would you ever have known you loved me if we had gone on in the same old way?"

There was a moment's silence.

"I should never have known I loved you," she answered softly.

* * * * *

"Rex, your impudence is astounding! It was three o'clock when you entered this room, and it is now a quarter-past five!" And Madge bounded into the room, with a hat and stick in one hand and an overcoat in the other. "Be off this moment, sir—only give me time to get away first! I dare not be left alone with Georgie yet!" And, depositing her burdens in a heap on a chair, Madge departed.

As Rex turned to get his hat, Georgie quietly slipped away to the further end of the room.

"Am I to go without even saying good-bye?" he asked, in an injured tone, at last.

"No; you needn't." And the tone was very demure. "If you would like to come here you can have your coat. I have been sewing a button on it."

Pain in the Back.

It has long been a lay custom to attribute pain in the back—lumbago—to disease of the kidneys. Yet physicians well know that very seldom indeed does a pain in the back indicate renal disease. It is true that pain in the back frequently accompanies renal disease, but cases of lumbago are far more frequent than cases of nephritis. Pain in the back is very frequently rehumatic in its nature, and it is so regarded by physicians in the great majority of instances. It will thus be recognized that this system is not characteristic of any special disease.

It seems to be usually overlooked that chronic intestinal disease is frequently accompanied by backache. In every case of aching back in which the physician is unable readily to a find a definite cause, careful investigation should be made as to the existence of even a mild grade of intestinal catarrh. Not a few cases of lumbago, which are relieved by the administration of salicylates upon the hypothesis of a rheumatic origin, are really benefitted through the antiseptic action of the drug upon the infected gastrointestinal tract. It will readily, therefore, be seen that the lookout for intestinal disease as the cause of backache, for the discovery of such origin will often enable him to bring about a brilliant therapeutic result. Mr. Harding Freeland, in the Lancet for April 21, 1900, notes that simple intestinal catarrh gives rise to back pain and that he has found speedy relief from ichthyol in does of five to ten grains.—Philadelphia Medical Journal.

Mr. Youngwife: "My dear, the bank in which my money is deposited has broken!" Mrs. Y.: "What a mercy you've got your check book at home, love!"

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The Kind of Country Our Troops Marched Through to Peking.

From the coast to Peking is one endless plain, unruffled by a single mound or gentle elevation. Dull-colored clay embankments, marking the course of roads, canals, or irrigation ditches ridge the flats in all directions, like welts laid with an enormous knout on a tortured country by some supernatural avenger. Uncultivated wastes of mud stretch everywhere, tainted by putrid ponds, and filling the spaces between the vast fields of millet, which cover the greater part of the land in north China. Thousands of big and little mounds dot the country, giving it the appearance, where not concealed by vegetation, of some vast prairie dog village. Human graves are these, strange bumps of Oriental superstition, to hold the land they occupy sacred against all the needs of posterity while the Chinese govern China.

Yonder, now in touch with the crawling column, now reaching away as if to relieve the troops of its nauseous contact, only to come creeping, snake-like, back again, after having made a wide detour, is the sluggish Pei-ho. In any country but China, this tortuous, turgid stream, dragging its yellow, slimy fluid slothfully between crumbling mud banks and shores reeking with refuse, would scarcely be entitled to rank as a ditch. A ditch it is—or rather a sewer; the sewer, as well as the commercial artery, of Chihli Province. It floats endless double lines of junks, with their prows pointing to the north or to the south, in unbroken procession. It is the mother of thousands of smaller ditches, all equally yellow and contaminated, which spread out over the country like the web of an immense water spider, licking up the filth of countless villages and feeding or draining, as the case may be, their cousins, the cesspools. It now harbors, but to indecently display, cast upon its banks or floating with its current, hundreds of bloated objects that were once men and women who lived upon the earth and had souls. On it, now, coolies, commandeered to serve the hated foreigners, laboriously push along, by means of poles, heavily laden boats. It breeds mosquitoes by the million, disease in many forms, and death multiplied for friend and foe alike.—Thomas F. Millard in Scribner's.

DOMESTIC ECONOMY.

Domestic Hints.

CELERY-POTATO CROQUETTES.—To a pint of mashed potatoes add half a teacup of cooked celery, season with a tablespoon of butter, half a teaspoon of salt, a dash of white pepper; add the yolk of one egg. Roll in shape of a small cylinder 3 inches long and 1½ inches thick. Dip them in a beaten white of egg, roll in cracker or bread crumbs and fry.

CANNELON OF BEEF.—Chop the remains of a piece of beef, season well and moisten with thickened gravy. Bind with a beaten egg or two. Roll some piecrust into an oblong sheet, put the beef in the middle and make into a roll enclosing the meat; close at the ends with round caps of pastry, pinch the edges together, lay in a dripping-pan, joined side down, and bake to a good brown.

CABBAGE PUDDING.—Chop up small, enough white cabbage to fill a lage baking pan when done. Put it in a pot of boiling water that has been salted, let it boil until tender, then drain thoroughly in a colander. In two quarts of the cabbage stir half a pound of butter, salt and pepper to taste, one pint of sweet cream and four eggs beaten separately. Add also a pinch of cayenne pepper; put in a pan and bake for half an hour.

SCRAMBLED EGGS WITH CHEESE.—Arrange four slices of fresh buttered toast on a hot platter and over each slice pour a tablespoonful of hot milk. To four eggs add four tablespoonfuls of milk, four tablespoonfuls of grated mild cheese, a little salt, a few grains of pepper, and heat slightly. Melt a tablespoonful of butter in an omelet pan, and when hot turn in the mixture. Cook quickly and stir constantly, lifting up from the bottom of the pan until the contents are firm, but soft. Arrange the eggs on toast and serve. Garnish with sprigs of parsley.

Hints to Housekeepers.

Do not jar any rising material while baking. Hence, do not slam the oven door.

If the point or end of the breast bone next the vent of any fowl, game bird, etc., bends easily to pressure, you can safely say the bird is young. If the bird be broken or doctored, then nip the flesh across butt of wings or neck between finger and thumb, when the fingers will sink into the flesh of the bird if it is young.

A delicious salad may be made of the turkey meat. Cut the meat into dice and mix it with an equal quantity of celery. Season with salt, paprika, onion juice and capers, and serve on lettuce leaves with mayonnaise dressing, to which some whipped cream has been added. Both white and dark meat may be used, and if the supply is small, very tender veal will not detract from the flavor.

Only a few minutes are required to rub the sideboard silver with chamois, and if this is done every day or two there will be no necessity for using powder, or having any regular cleaning day for it. Ammonia or alcohol added to the powder will brighten silver more quickly, but the polish thus obtained does not last so long as that procured by the use of a little more effort on the part of the rubber.

A rice and date pudding which will be liked, especially by the children, is made as follows: Wash, stone and chop (not too fine) one pound of dates; butter a pudding dish and put into it a layer of boiled rice and over it a layer of the dates. Continue until the dish is full, leaving a layer of rice at the top. Beat two eggs and add to them two cupfuls of milk, two teaspoonfuls of granulated sugar and a little salt; pour it over the rice and dates and bake twenty-five minutes. Serve cold with cream. Figs or raisins may be used in place of dates. Both, however, should be stewed for a few minutes before mixing them with the the rice.

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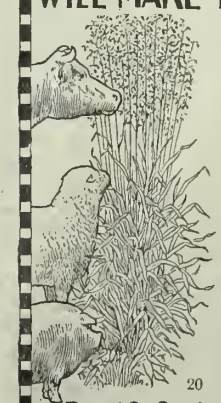

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 30, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	Feb.	May.
Wednesday	—@—	79⅛@79¾
Thursday	—@—	79⅛@80¼
Friday	—@—	80⅜@81½
Saturday	—@—	81⅜@82⅜
Monday	—@—	81⅛@80½
Tuesday	—@—	80⅝@81⅜

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	6s 0⅝d	6s 0⅞d
Thursday	6s 0¾d	6s 1⅛d
Friday	6s 1⅜d	6s 1¾d
Saturday	6s 1⅜d	6s 1¾d
Monday	6s 1⅜d	6s 1¾d
Tuesday	6s 1⅜d	6s 1¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 03⅞@1 04⅛	1 07⅞@1 08⅛
Friday	1 04¾@1 05⅝	1 08¾@1 09⅜
Saturday	1 05 @1 05⅛	1 08⅜@1 09
Monday	1 04¼@1 04⅛	1 08¼@1 07⅞
Tuesday	1 04 @——	1 07⅞@——
Wednesday	1 03¾@1 03⅛	1 07⅜@1 07⅛

WHEAT.

Considering that the wheat market has for some time past moved along in very sluggish fashion, with no fluctuations of great moment, either in values of offerings by samples or in speculative ways, there was a decided upward turn in prices of futures on Thursday and Friday of last week, both May and December wheat recording an advance of fully 1½c. This was in response to higher prices established for futures in Eastern and foreign markets, but no well defined cause was given for the advance, not even bubonic plague in Argentina being named as having had anything to do with it. While there was naturally a firmer feeling imparted to the spot market, prices obtainable on offerings by sample showed no appreciable improvement, nor were there evidences of any very active or urgent inquiry on the part of either shippers or millers. Call Board values were not long maintained at the advance, sagging Saturday half a cent or more, followed by further decided shading in prices at the beginning of the current calendar week. While it would be very desirable to have wheat values improve, there being plenty of room for an upward movement in prices, there is nothing to warrant anticipating any decided change for the better for a month or so at least, the experience of nearly all past seasons showing that there is more rush to sell than to buy during February, especially with good crop prospects, as is the case at this date. The visible supply in the United States east of the Rockies was the past week reduced 405,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.05⅝@1.03½.

December, 1901, delivery, $1.09⅜@1.07⅜.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.03¾ @ 1.03½; December, 1901, $1.07⅜@ 1.07½.

California Milling	$1 00 @1 05
Cal. No. 1 shipping, alongside	98¾@1 00
Oregon Valley	97½@1 00
Washington Blue Stem	1 00 @1 05
Washington Club	97½@1 02½
Off qualities wheat	92½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s2½d@6s3d	6s3½d@6s4d
Freight rates	35@36¼s	37½@38¾s
Local market	$0 95@97½	$0 98¾@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

The market shows no special change from the conditions previously noted. If there is any difference to record in trade, it is of lighter proportions than earlier in the month, especially on export account, as Oriental buyers have been taking hold rather sparingly during the past week or two. Spot supplies are of fair proportions. While the market is not quotably lower, it cannot be termed firm.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

Market has developed a little firmer tone, more particularly for desirable shipping grades, owing to a special freight rate overland having been fixed temporarily at $10 per ton, with the proviso that only Eastern cars returning home be used, that they be filled to their full capacity, and that the railroad company do the hauling at its own convenience. It is probable that the remaining surplus of desirable qualities will be considerably reduced through the above rate. A part cargo of 2300 tons, with a clearance valuation of $46,300, went eutward the current week per sailing vessel for London. It is to be hoped that shipments by sea will continue to be made on a fairly liberal scale, as prospects are excellent for coming crop, and stocks cannot be reduced to too small proportions during the next few months.

Feed, No. 1 to choice	73¾@ 75
Feed, fair to good	70 @ 72½
Brewing, No. 1 to choice	80 @ 85
Chevalier, No. 1 to choice	97½@1 02½
Chevalier, No. 2	85 @ 90
Chevalier, poor	70 @ 75

OATS.

Prices continue at a comparatively high range for this cereal, with light stocks of nearly all descriptions, especially of high grade white oats. Surprise oats are practically out of market, and the same may be said of Grays. Offerings of Reds and Blacks are of only moderate quantity, and these are in very fair request, with sales in the main at full current rates.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 32½@1 40
White, poor to fair	1 20 @1 27½
Gray, common to choice	1 20 @1 37½
Milling	1 45 @1 50
Surprise, good to choice	——@——
Black Russian	1 15 @1 35
Red	1 20 @1 45

CORN.

No large quantities of Eastern are now offering, nor is domestic product in heavy supply, although receipts of latter have been showing some increase. For best qualities the market has been moderately firm. Considerable of the domestic corn offering is more or less damp, which is operating against its advantageous sale.

Large White, good to choice	1 15 @1 17½
Large Yellow	1 15 @1 17½
Small Yellow	1 50 @——
Eastern, in bulk (carload lots)	1 09 @1 10

RYE.

Demand is slow and of light volume, causing the market for the time being to incline against sellers.

Good to choice, new	85 @ 87½

BUCKWHEAT.

Market is quiet but unfavorable to buyers, stocks being light and in few hands.

Good to choice	2 00 @2 10

BEANS.

Prices continue high for white beans of all descriptions. There are no heavy stocks of any variety, and some are in too light supply to be quotable, notably Pea beans. Lady Washingtons or Large Whites make the most liberal display in the line of whites, and present offerings of those do not admit of the filling of very heavy orders. In colored beans there is a moderate movement, mainly in Pinks and Bayos, these constituting the bulk of present supplies. Tendency on Pinks has been slightly in favor of buyers, while Bayos have ruled fairly steady.

Pea, fair to good, 100 lbs	—— @——
Small White, good to choice	4 75 @4 90
Lady Washington	4 10 @4 25
Butter	4 25 @4 50
Pinks	2 20 @2 35
Bayos, good to choice	2 65 @2 75
Reds	3 00 @3 25
Red Kidney	4 00 @4 25
Limas, good to choice	5 65 @5 75
Black-eye Beans	2 75 @3 00
Horse Beans	1 75 @2 00
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

Little doing in this line and not much stock to operate upon. Values for choice Green are being well sustained, but Niles peas are difficult to place and prices for same are poorly defined.

Green Peas, California	2 60 @2 75
Niles Peas	1 85 @2 00

WOOL.

The same featureless market as for some time past continues to be experienced, with trade East in much the same dull and depressed state as in this center. The recent numerous failures on the Atlantic side have thrown large quantities of wool on the market at extremely low figures, not only supplying the immediate requirements of most manufacturers, but causing a lack of confidence and making operators exceedingly cautious. It is the general impression, however, that the worst is now over, and that while the market may be slow in recovering, any changes from this time forward are more apt to show improvement than the reverse.

SPRING.

Humboldt and Mendocino	16 @17
Northern, free	14 @15
Northern, defective	12 @13
Middle Counties, free	14 @15
Middle Counties, defective	11 @13
Southern, 12 mos	8 @10
Southern, free, 7 mos	9 @11
Southern, defective, 7 mos	8 @ 9
Oregon Valley, fine	17 @18
Oregon Valley, coarse to medium	16 @17
Eastern Oregon, choice	13 @15
Eastern Oregon, fair to good	10 @12
Nevada, as to condition	11 @15

FALL.

Humboldt and Mendocino	11 @13
Middle County	9 @10
San Joaquin	7 @ 9
San Joaquin Lambs	8 @ 9

HOPS.

Quotable prices remain about as last noted, but there is little or nothing doing in a wholesale way, with few hops now offering from first hands, so quotations for the time being for round lots are not very well defined. There has been a tolerably free movement lately to Australia, the last steamer taking about 160 bales, and about 90 went forward for same destination via Victoria, B. C.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

The hay market has lacked firmness, with receipts and offerings considerably above average needs, and the demand slow. Strictly choice hay sells fairly well, but all other grades drag badly at low and irregular figures. Dealers are, on account of their own heavy holdings, endeavoring to prevent the manifestation of weakness.

Wheat	8 00@12 50
Wheat and Oat	8 00@11 50
Oat	7 00@11 50
Barley	6 00@ 9 50
Volunteer	5 00@ 7 00
Alfalfa	8 00@ 9 50
Stock	5 00@ 7 00
Compressed	9 00@13 00
Straw, ℔ bale	40 @ 47½

MILLSTUFFS.

Supplies of Bran continue light and market has been fully as unfavorable to buyers as previously noted. Recent heavy shipments to the Hawaiian Islands have proven no small factor in bringing about the existing firmness. Middlings were not in heavy stock, neither were they in active request. Shorts were in such light supply as to be hardly quotable. Rolled Barley was more steadily held than previous week. Milled Corn was without quotable change.

Bran, ℔ ton	15 00@15 50
Middlings	17 00@19 00
Shorts, Oregon	15 00@16 00
Barley, Rolled	16 50@17 00
Cornmeal	25 50@ ——
Cracked Corn	26 50@ ——

SEEDS.

The market is in the main quiet, and prices throughout are practically the same as previously noted. Alfalfa Seed is offering in considerable quantity for this advanced date, probably four to five carloads being now available to buyers. That more will be required is doubtful, and this may prove slightly in excess of the season's needs from this time forward. About six carloads have been thus far distributed this winter from this center.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

HONEY.

While supplies are light, there is more of amber grades, both Comb and Extracted, than there is immediate demand for at full current rates asked for same. Of pure water white there is little or none offering, and values for this sort are at present largely nominal.

Extracted, White Liquid	7½@ 8
Extracted, Light Amber	6¾@ 7¼
Extracted, Amber	5½@ 6½
White Comb, 1 lb frames	13 @14
Amber Comb	11½@12½
Dark Comb	8 @ 9

BEESWAX.

There is little of any kind offering. Market is firm at current rates, especially for high grade qualities.

Good to choice, light, ℔ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Market for Beef is steady at current figures, and there is nothing to warrant anticipating easier prices very soon. Demand from consumers is of course somewhat restricted by the comparatively stiff values now ruling. Mutton is in slim supply and is commanding fully as high prices as last quoted. Lamb is offering very sparingly and is bringing good figures. Veal is selling at the usual wide range, with market firm for choice. Hogs were not in large receipt, either imported or domestic, and market remained against buyers.

Beef, first quality, dressed, net ℔ lb	7¾@ 8¼
Beef, second quality	7½@ 8
Beef, third quality	6½@ 7
Mutton—ewes, 9@9½c; wethers	9½@10
Hogs, hard grain fed, medium	6 @ 6½
Hogs, small, fat	6 @ 6½
Hogs, large, hard	5¾@ 5⅞
Hogs, feeders	5¼@ 5½
Hogs, country dressed	7½@ 8
Veal, small, ℔ lb	6 @ 9
Veal, large, ℔ lb	7 @ 8½
Lamb, yearlings, ℔ lb	10 @11
Lamb, spring, ℔ lb	12½@15

POULTRY.

Owing to continued heavy arrivals of Eastern poultry, prices for nearly all descriptions have kept at a low range, Fryers and Broilers in desirable condition, and choice Young Pigeons proving about the only exceptions. The demand for this small stock was not very brisk at the prices ruling. Considerable old poultry and full grown young was carried over from preceding week for lack of custom.

Turkeys, live hens, ℔ lb	11 @ 12
Turkeys, live gobblers, ℔ lb	10 @ 11
Turkeys, Dressed, per lb	13 @ 15
Hens, California, ℔ dozen	3 50 @4 50
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	4 50 @5 00
Fryers	4 50 @5 00
Broilers, large	4 00 @4 50
Broilers, small	3 00 @4 00
Ducks, old, ℔ dozen	4 00 @5 00
Ducks, young, ℔ dozen	5 00 @6 50
Geese, ℔ pair	1 75 @2 00
Goslings, ℔ pair	1 75 @2 00
Pigeons, old, ℔ dozen	1 00 @1 25
Pigeons, young	2 50 @2 75

BUTTER.

Choice to select fresh was not in heavy stock and was in very fair request, favorite marks selling above rates quoted. Defective qualities were offered freely, and met with a dragging, weak and irregular market. Packed and held butter is offering in considerable quantity for this late date, and market for same is decidedly favorable to buyers.

Creamery, extras, ℔ lb	20 @—
Creamery, firsts	18 @—
Creamery, seconds	17 @—
Dairy, select	17 @18
Dairy, firsts	15 @16
Dairy, seconds	13 @14
Dairy, soft and weedy	— @—
Mixed store	11 @12
Creamery in tubs	17 @19
Pickled Roll	18 @19
Firkin, California, choice to select	17 @19
Firkin, common to fair	16 @17

CHEESE.

There have been no marked changes since last review. Buyers are operating as slowly as possible, anticipating easier figures, but that there will be any very pronounced breaks in values in the near future is not probable. Stocks are not accumulating to any noteworthy extent.

California, fancy flat, new	11½@—
California, good to choice	10 @11
California, fair to good	9½@10
California Cheddar	— @—
California, "Young Americas"	10 @12

EGGS.

Although arrivals of domestic fresh showed increase, Eastern and cold storage eggs were virtually out of stock, and market was in fairly healthy shape, with bulk of sales at higher figures than the daily quotations indicated. Buyers are endeavoring, however, to beat prices down, and supplies will soon be sufficiently liberal to enable them to operate at easier figures than now current.

California, select, large, white and fresh	27 @—
California, select, irregular color & size	25 @26
California, good to choice store	24 @25
Eastern, as to section and grading	— @—
Eastern, cold storage	20 @—

VEGETABLES.

The market for Onions presented a little easier tone, without being materially lower. Choice to select hard, sound and uncut Onions are not plentiful, nor is there any likelihood of the market being burdened with this description of stock during the balance of the season. Other Winter vegetables were in light receipt, with values in the main decidedly steady. Arrivals of fresh vegetables were of slim volume and commanded, as a rule, good prices.

Asparagus, ℔ lb	15 @ 25
Beans, String, ℔ lb	9 @ 12½
Beans, Wax, ℔ lb	— @ —
Beans, Lima, ℔ lb	— @ —
Cabbage, choice garden, ℔ 100 lbs	1 00 @1 25
Cauliflower, ℔ dozen	50 @ —
Egg Plant, ℔ lb	12½@ 15
Garlic, ℔ lb	3½@ 4½
Mushrooms, Wild, ℔ lb	— @ —
Mushrooms, Buttons, ℔ lb	— @ —
Onions, Yellow Danver, ℔ cental	1 75 @2 10
Peas, Sweet, garden, ℔ lb	5 @ 6
Peppers, Green Chile, ℔ lb	12½@ 15
Squash Summer, ℔ box	1 50 @2 00
Squash and Pumpkin, ℔ ton	15 00 @20 00
Tomatoes, ℔ crate	75 @1 75

POTATOES.

Much the same conditions prevailed as were current preceding week. Choice to select potatoes were not plentiful and met with a firm market, while lower grades were in excessive stock and moved slowly at low figures. Oregon Garnet Chile and Peerless were in moderate request for seed, the latter being in lightest stock and commanding best prices.

Burbanks, River, ₩ cental	30	@	60
Burbanks, Petaluma-Tomales, ₩ ctl.	35	@	60
Burbanks, Salinas, ₩ cental	85	@	1 15
Burbanks, Oregon, lb cental	55	@	90
Garnet Chile, ₩ cental	75	@	90
Peerless, ₩ cental	65	@	1 00
Sweet Potatoes, Yellow, ₩ cental	75	@	1 10

The Fruit Market.

FRESH FRUITS.

Apples are not in heavy stock, and especially are choice to select in quite limited supply, the latter being in very fair request and commanding comparatively good figures, in some instances an advance on utmost rates warranted as a quotation. Common and defective qualities are not sought after, and where sales of this description are effected, much the same low prices have to be accepted as have been current for some weeks past.

Apples, fancy, 4-tier box	1 50	@	2 00
Apples, good to choice, ₩ 50-lb box.	75	@	1 00
Apples, common to fair, ₩ 50-lb box.	35	@	65

DRIED FRUITS.

The market for cured and evaporated fruits continues dull and unfavorable to sellers. The occasional transfers which are effected are more the result of pressure to realize than of positive demand. As is to be expected under such circumstances, buyers do the dictating, and cutting of rates is the rule rather than the exception. It would seem that with asking prices down to present extremely low levels, it would be unnecessary to make further inducement to buyers in this direction, but there is more being done today in the way of granting concessions and shading prices than when values were far above the figures now current. Most of the recent business has been in Peaches and Pears, both going at the lowest figures ever known in this market. Peaches are not in very large supply, but Pears are offering in much greater quantity than is warranted by the requirements, despite the extremely low and unprofitable figures prevailing. Apples fail to move to any noteworthy extent, low prices proving no inducement to either dealers or speculators. Figs are at present practically unsalable. Small transfers of common black in sacks have been made at 1½c. per pound. The Prune market shows no more life than last noted. Non-Association Prunes are still offering, although the quantity now outside of Association control is generally admitted to be comparatively small. It is estimated that about 3000 carloads of this season's Prunes have been thus far disposed of, and the quantity on hand is variously stated at from 3000 to 4000 carloads, a large proportion being small and ungraded. Most of these small Prunes will likely be absorbed outside of regular dried fruit channels.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6	@	6½
Apricots, Royal, choice, in sacks, ₩ lb.	7	@	7½
Apricots, Royal, fancy	9	@	—
Apricots, Moorpark	9½	@	11½
Apples, in 50-lb boxes, rings, pressed, fancy	5	@	5½
Apples, 50-lb boxes, rings, pressed, good to choice	3	@	4
Figs, White, fancy pressed	6	@	7
Nectarines, ₩ lb	4	@	6
Peaches, unpeeled, fancy	6	@	6½
Peaches, unpeeled, choice	4½	@	5
Peaches, peeled, in boxes	11	@	14
Pears, unpeeled Bartletts, halved, fancy.	5	@	6
Pears, halved, unpeeled Bartletts	3	@	4
Pears, quartered, unpeeled Bartletts	3	@	4
Plums, Black, pitted	4	@	5
Plums, White and Red	5	@	6
Prunes, Silver	4½	@	6

COMMON SUN-DRIED.

Apples, sliced	2	@	2½
Apples, quartered	2	@	3
Figs, Black	1½	@	2½
Figs, White	2½	@	3½
Peaches, unpeeled	3	@	5

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ½c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

The feature of the week has been the naming of prices by the Association on Pacifics or second grade Raisins, the figures being 5½c., 5¼c. and 5c., respectively, for 4, 3 and 2 crown. Stocks of Raisins are all under Association control. The local market is in fairly healthy shape, but the same cannot be said of conditions East.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ₩ 20-lb box	3 00	@	—
Dehesa Clusters, 5-crown	2 50	@	—
Fancy Clusters, 4-crown	2 00	@	—
London Layers, 3-crown, ₩ box	1 60	@	—
do do 2-crown, ₩ box	1 50	@	—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ₩ lb		—@	7
Loose Muscatel, 3-crown		—@	6½
Loose Muscatel, 2-crown standard		—@	6
Loose Muscatel, seedless		—@	6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ₩ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ₩ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Arrivals of Oranges have been heavy the current week, with offerings largely of rather ordinary quality, and for such stock the market was weak. Sales at auction ranged down to 70c. for standards and up to $2 per box for fancy Navels. Lemon market was without quotable improvement. Offerings were fairly liberal. Limes were in reduced stock, but prices did not advance.

Oranges—Navel, ₩ box	75	@	2 00
Valencia, ₩ box	—	@	—
Seedlings, ₩ box	50	@	1 00
Tangerines, ₩ box, as to size	75	@	1 75
Grape Fruit, ₩ box	1 00	@	2 00
Lemons—California, select, ₩ box	2 00	@	—
California, good to choice	1 50	@	1 75
California, common to fair	75	@	1 25
Limes—Mexican, ₩ box	4 50	@	5 00
California, small box	50	@	1 00

NUTS.

Almonds are not offering in large quantity, but are meeting with very slow sale at quotably unchanged rates. Spot stocks of Walnuts are light and market is fairly steady but quiet. Peanuts are in moderate supply and unchanged in price.

California Almonds, shelled	22	@	25
California Almonds, paper shell, ₩ lb	12	@	13
California Almonds, soft shell	9	@	11
California Almonds, hard shell	6	@	7
Walnuts, White, soft shell	7½	@	9½
Walnuts, White, California, standard	7	@	9
Chestnuts, California Italian	—	@	—
Peanuts, California, fair to prime	4½	@	5½
Peanuts, Eastern, hand-picked	5½	@	6
Pine Nuts	5	@	6

WINE.

There is not much doing in the way of transfers of new wine from first hands, more owing to absence of noteworthy offerings than to lack of demand. Market remains firm, dry wines of last year's vintage being quotable at 16@19c per gallon wholesale, and some holdings are not obtainable within this range. Shipments of wine from California in 1900 were 4,794,240 gallons to Eastern points and 996,150 to foreign points, the total being 5,790,390 gallons and 8383 cases, with a total valuation of $1,755,925. In previous year shipments aggregated 3,524,630 gallons and 7070 cases, representing a total valuation of $1,158,865. Tuesday's Panama steamer took 165,314 gallons for New York.

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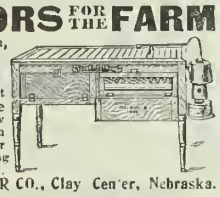
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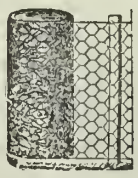
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THE VETERINARIAN.

Answers by Dr. Creely.

THAT HOG CHOLERA CASE.

TO THE EDITOR:—I thank you very much for your answer. To date I have lost thirty-four head of hogs, some of them thoroughbred. There are some other questions I would like to ask, if it is not imposing on good naturo, as I am very much interested in this hog cholera. I will try to describe tho disease again. Tho hogs are taken with a hacking cough; droop around; tremble about tho shoulders and flanks; run at the nose sometimes: some of them can hardly breatho, the head is so clogged with mucus; the eyelids become stuck together with mucus or wax, so they become blind; some of them will become stupid for several days and then get a severe diarrhœa, pass a thin, black fluid, and finally die; the intestinos are bloodshot; lungs have dark blotches on them; others will be stupid, refuse to eat, and sway their hind parts from side to side when walking, have great thirst and dio; intestines almost solid, with a black substance like rubber, and almost as tough. For the last four weeks since the first was taken sick I have fed ground barley with copperas in it—about a tablespoonful to each animal—onco or twice daily, and all the alfalfa hay they will eat. I have also fed middlings in a very thin slop. Some seem to get better and then worse again. I have some that have first symptoms, cough and running at the nose, and got all right again, and after a week they will show signs of disease again.

1. Is there any positive curo for hog cholera?
2. What is tho treatment?
3. What effect does copperas have?
4. Would aconite do any good or harm, and how much to give at a dose?
5. Will hogs get cholera a second timo?
6. Will waste or slop from hotel kitchens cause cholera?
7. Aro coffee grounds, orange peel or lemon in the slop injurious to hogs?
8. Will a person take the disease from hogs?
9. Would broth from hog meat that had cholera thrown into feed cause other hogs to have the disease?
10. How long after they have been exposed beforo they come down with cholera?—L. W. LEAK, Auburn.

1. Prevention and change of pasture, as well as isolation; perhaps Pasteur has a virus to prevent.
2. Treatment was given last week.
3. Copperas is a sulphate of iron and is the best blood tonic we have, also an astringent, and would, by acting as such on the bowels, prevent discharge being so abundant.
4. Aconite is worthless, except a few doses in the beginning, after which it would be decidedly fatal.
5. One attack, as a rule, grants immunity for several years, although this is not always constant.
6 and 7. No; although care taken in feeding keeps them in a better condition to stall off an attack.
8. A person will not take this disease, for the reason that the germs of the disease will not thrive in the human system.
9. Decidedly so, although some authorities claim the heat would destroy the bacillus.
10. The stage of inoculation is very short, depending on the condition of stock and the form the disease takes.

INJURED FOOT.

TO THE EDITOR:—About four months ago my horse became lame in one of his front feet. In a week the blacksmith cut away along a crack in the sole of the hoof and let out a small amount of white matter. The hole is about ¾ inch deep and ½ inch in diamotor, and is midway between the frog and outer crust. I syringed the hole and stopped it up with rosin and put a shoe on, with leather between. The horse apparently improved until a week ago, when he became very lame again, and the hole is discharging a little matter. The horse has not been worked sinco going lame.—W. N. R., Los Gatos.

The hole should not have been stopped with rosin or anything else. On the contrary, frêe vent should be given to allow the pus to escape. Go to the shoer and have him cut the sole all around the foot as low as possible, and be particular to thoroughly open the old wound, but it must be done without hemorrhage.

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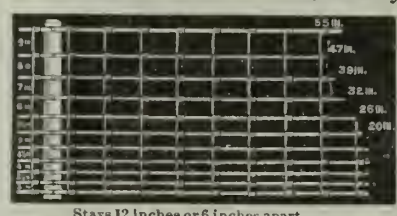

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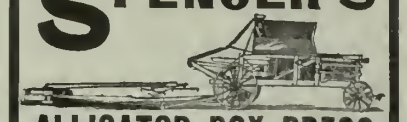

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CHEAP, EASY TO HANDLE AND APPLY.
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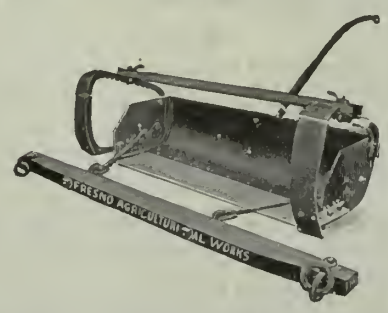
The Fresno Scraper.
3½-4-5 Foot.



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NEW STOCK. NEW PRICES.

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OLIVE TREES.
Plant the Manzanillo, one of the largest and best pickling kinds; earliest to ripen, heavy bearer, rich in oil. I propagate all leading varieties. Write for prices.
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Plant Evergreen Millet
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MANZANILLO AND NEVADILLO.
Large Trees, 5 to 7 ft. Write for Price List.
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FOR SALE IN LOTS TO SUIT.
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DECIDUOUS FRUIT TREES,
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You know what you're planting when you plant Ferry's Seeds. If you buy cheap seeds you can't be sure. Take no chances—get Ferry's. Dealers everywhere sell them. Write for 1901 Seed Annual—mailed free.
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TREES AND PLANTS.

Good Assortment! Best Quality!

ADMIRAL DEWEY PEACH. Earliest Freestone: SULTAN, the Biggest Plum.

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TREES!

MORRIS RED Apple, SUGAR Prune, CLIMAX Plum, CLAIRAC MAMMOTH Prune, PHILLIPS CLING Peach, MUIR Peach in Dormant Bud.

A GENERAL ASSORTMENT OF NURSERY STOCK.

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SUGAR PRUNE GRAFTING WOOD 5c PER FOOT.

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GENERAL ASSORTMENT — OF — FRUIT TREES.

APPLES, PEARS, PEACHES, PLUMS, PRUNES, CHERRIES, APRICOTS, ETC.

MY STOCK IS EXTRA FINE THIS YEAR.

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HAS A COMPLETE LINE OF

NURSERY STOCK

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Myrobolan and Peach Root Prunes, Bartlett Pears; Lambert, Bing and Yellow Spanish Cherries; Amsden June Peaches; Grape Vines.

WRITE FOR PRICES ON STOCK WANTED.

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Novelties, Plants, Seeds and Bulbs

of every description for the GARDEN and the HOUSE now ready.

SEND FOR IT.

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Every horticulturist should have my 28-page illustrated catalogue which tells all about

Citrus Trees

The old sorts and the tested new sorts; also tables for planting trees, sowing seed, etc. Remember, I send this valuable book Free! Your address on a postal card brings one.

R. M. TEAGUE (established 1890), San Dimas, (Los Angeles Co.) Cal.

75,000 budded trees now ready for this season's trade.

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Leading Varieties of Fruit and Nut Trees Write for Prices. Address

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28 Varieties of Walnuts,
11 Varieties of Chestnuts,
9 Varieties of Filberts,
Pecans, Hickories and Butternuts.

Fine Illustrated Catalogue, with 15 half-tone cuts of Walnuts and 4 of Chestnuts, etc.

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ORANGES, LEMONS, POMELOS.

Apples, PEARS, APRICOTS, PRUNES, PEACHES, CHERRIES, Etc.

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Grape Vines and Cuttings, Berry Plants (LOGANBERRIES), Roses, Palms, and Ornamental Shrubs.

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SATSUMA or OONSHIU ORANGES

On Citrus Trifoliata Stock.

The earliest variety and the hardiest stock. Tree thornless and fruit seedless. Also all the prominent varieties of Oranges and Pomelos on both Sour and Citrus Trifoliata stocks. A full line of fruits and ornamentals.

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GREGORY'S Warranted Seed

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Or hard the labor on it,
Vexation is the only crop
Bad seed will raise upon it.

All seed warranted to be pure and reliable, as per page 2 of catalogue. Our trade with market gardeners is immense; and market gardeners buy none but the best of seed. Write for our new Vegetable and Flower Seed catalogue—free to everybody.

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LARGEST WEST of the ROCKY MOUNTAINS.

FANCHER CREEK NURSERIES.

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Sample 1-pound boxes of the dried Figs sent prepaid for 30 cents.

Trees of this variety in quantities.

Deciduous, Citrus, and Ornamental Trees of every sort.

Our large illustrated catalogue tells all about our 3 nurseries and our immense stock. It's sent free; you ought to have it.

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JOHN ROCK, Manager.

FRUIT AND ORNAMENTAL.

ORANGES, OLIVES AND GRAPES.

RESISTING VINES:

Rupestris St. George, Riparia Gloire de Montpellier, Riparia a grandes fenilles, Solonis Robusta.

The Largest and Finest Collection of PALMS, ORNAMENTAL TREES, ROSES, SHRUBS AND VINES on the Pacific Coast.

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¾ to 1 in.—4 to 6 ft.	$20 00	$180 00
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3 to 4 ft.	$12.00	
2 to 3 ft	$10.00	

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— I HAVE TO OFFER THIS SEASON —

FRUIT TREES (Apple, Pear, Apricot, Peach, Prune, Almond, Etc.)

Burbank's SUGAR PRUNE, CLIMAX PLUM, ROOTED GRAPE VINES,

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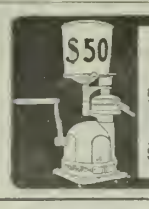

That it's a SHARPLES Cream Separator guarantees superiority, to those who know, and others should write for catalogue No. 131. *Very valuable treatise on "Business Dairying" free for the asking.*
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ROYAL SPRAY PUMP

Is a double-acting Spray Pump, designed especially for and meets the requirements of the best orchardists and orange growers desiring quick work at high pressure. Notwithstanding the large capacity of this Pump, one man can operate it constantly against pressure without undue effort.

Piston is easily and quickly repacked and all valves easily accessible. Piston, piston-rod, valves, valve seats and cylinder lining are brass. Piston-rod is outside guided, so that it runs perfectly straight.

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THE SECOND, THIRD AND FOURTH SUBDIVISIONS —OF THE— JOHN BIDWELL RANCHO,

Near Chico, Butte County, California,

Are now offered for sale in lots of from 5 TO 40 ACRES. This is the most fertile body of land ever placed on the market, and is located in the FINEST FRUIT SECTION IN THE STATE. It is a living testimonial of the varied fruit and cereal productions that can be grown in the State.

Read What Can Be Grown on This Land

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FOR DESCRIPTIVE TREATISE, TERMS, ETC.,

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OLIVES ALFALFA ORANGES PEARS

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CROP FAILURES are practically impossible where NITRATE OF SODA is used as a fertilizer. Its use has made an exact science of crop growing. You can always rely upon a good crop when it is used singly or in proper combination with other elements of plant foods.

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Write to them for pamphlets.

Phosphoric Acid - - -

is necessary to bring out the flavor and quality of Fruits, and promote the growth of all kinds of Cereals. Most California soils are deficient in this important plant food, which is being steadily depleted by continual cropping, and must be replaced to obtain good yields. Try an application of

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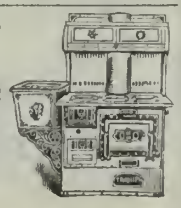
For Sale by BALFOUR, GUTHRIE & CO., 316 California St., San Francisco.

$50.00 RANGE FOR $25.00

TO INTRODUCE OUR TRIUMPH STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. **Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.**



Patrons of Husbandry.

Tulare Grange.

TO THE EDITOR:—This Grange held its regular semi-monthly meeting on Saturday, Jan. 19th. Bro. Winans, State Organizer, was present. He has been canvassing the farmers of this neighborhood for membership in the Grange, and brought in fifteen applications for degrees. He also reported having organized Giant Oak Grange at Farmersville, in this county, with a charter membership of forty-six—the largest he has ever organized.

The delegates from this Grange to the Fruit Growers' Convention, held in Sacramento on the 15th, reported the formation of a Fresh Fruit Association of California thereat.

Sister Fleming, who was unavoidably prevented from being present at the last meeting to be installed as Chaplain, was duly installed.

A communication from U. S. Senator Geo. C. Perkins was read. It related to a congressional appropriation to enable the hydrographic department to investigate and survey the flow of streams and water storage locations for irrigation purposes. The members of Tulare Grange will receive from Senator Perkins the Year Book of the Department of Agriculture and a supply of vegetable seeds.

The Lecturer announced having received the National Grange Quarterly Bulletin for the first quarter of 1901, and announced the subject therein set for consideration this month, which is the Grout Bill, passed by the House of Representatives, and now before the U. S. Senate for consideration.

After a short discussion of the substance of this bill, it being advocated by the National Grange, the following resolutions were passed:

Tulare Grange, No. 198, P. of H. of Cal., having investigated and considered H. R. Bill 3717, to regulate the sale of oleomargarine and other imitation dairy products, known as the Grout Bill, and considering its requirements just and equitable to producer and consumer of oleomargarine and other imitation dairy products, be it

Resolved, That the coloring of oleomargarine and similar products, to make them resemble butter, is, manifestly, for the purpose of deceiving the purchaser; and be it further

Resolved, That we earnestly request our Senators in Congress to support and vote for the passage of H. R. Bill 3717.

The Grout Bill confers on the several States of the Union the right to regulate the sale of food products, when brought from other States in the original package, the same as if they were grown or made in the State.

The internal revenue tax is now 2 cents per pound on oleomargarine and imitation butter. The Grout Bill reduces this tax to one-fourth of a cent per pound if the product is marketed in its own natural color; but if it is colored to resemble butter, it increases the tax to 10 cents per pound. The bill lately passed the House of Representatives by a large majority and is now in the Senate.

At the National Stock Growers' Convention, held last week at Salt Lake, Utah, resolutions condemning the Grout Bill were passed, and in one hour $10,000 was raised among the members to prevent its passage in the U. S. Senate.

The attention of the Grange was called to the introduction, in the Legislature of California by Senator Taylor of Alameda county, of a joint resolution, resubmitting to the people a constitutional amendment exempting bonds from taxation. The Grange condemned this, in resolutions, as vicious, special, class legislation. The Grange asserts the Constitution of California makes bonds and property, for taxable purposes, assessable in the place where their payment is secured. It recognizes the fact that the bondholders evade this requirement of the Constitution and pay no taxes. The Grange also recognizes the fact that no class of property owners more readily resort to the courts for the enforcement of their rights than does the bondholder. The Grange makes no objection to the enforcement of the bondholders' rights, but it claims in equity and law he should be required to perform his duty to the State and pay his tax; he should be required in law to do equity before he asks equity. Any action taken by the Legislature should provide this at least; and no amendment to the Constitution, exempting bonds of any county, municipality or district from taxation, which does not limit the rate of interest that such bonds shall bear, should be submitted for approval to the people.

Bro. Winans, in company with Bro. A. J. Woods, will further canvass Tulare township for membership in Tulare Grange.

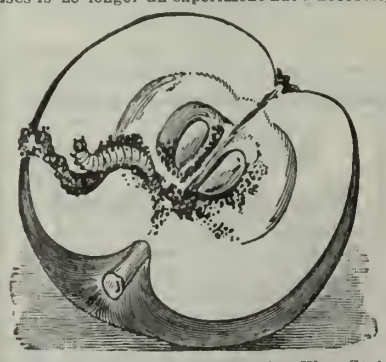
Every taxpayer in Tulare irrigation district should join Tulare Grange in fighting this vicious, class legislation. In it is their only hope for relief.

There was a special meeting of Tulare Grange on Saturday, Jan. 26th.

J. T.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had for the asking.

Sore Shoulders

sore neck, sore back, &c., resulting from collar, saddle or harness galls and chafing, and all forms of canker, callous, &c., are instantly relieved and cured with

Tuttle's Elixir.

Used and endorsed by Adams Express Company.

Dr. S. A. Tuttle. Wolcott, Vt., July 15, 1899.
Dear Sir:—I had a horse that had two bunches on his shoulder, caused by wearing a new collar. Less than one bottle of your Elixir cured it after six months' standing. L. W. FISHER.

Cures also curb, splint, contracted cord, all forms of lameness and colic, distemper, founder, pneumonia, &c.

TUTTLE'S FAMILY ELIXIR cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience," FREE.

Tuttle's Elixir Co., 38 Beverly St., Boston, Mass. 487 O'Farrell St., San Francisco, Cal.
Beware of so-called Elixirs—none genuine but Tuttle's. Avoid all blisters; they offer only temporary relief if any.

HEADQUARTERS —FOR— Climax, Sultan, Bartlett and Shiro Plum Trees.

A few thousand at lowest regular nursery prices.

Burbank's Experiment Farms, Santa Rosa, Cal.

CURE YOUR COLD WITH R. Hall's Pulmonary Balsam.

The Secretaryship of the State Board of Agriculture.

TO THE EDITOR:—My attention has been called to an article in your valued paper under the heading of "Secretaryship of the State Board of Agriculture," in which you say, in commenting upon a resolution framed by the writer calling upon the Governor to appoint a farmer, and not a politician, to the position of secretary of said board: "The sentiment is good, but the Governor does not appoint the secretary of the State Board of Agriculture. The board elects its own secretary, and, we hope, will heed the suggestion of the Grange."

When your correspondent originally presented this resolution in Napa Grange he was well aware that the State Board of

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SUPERIORITY
...of the...
Improved U. S.
Cream Separator
can be had by writing the
VT. FARM MACHINE CO.
Bellows Falls, Vt.
194

CREAM SEPARATORS
The REID is light running, close skimming, simple and durable. Send for catalogue No. 14.
A. H. REID, 30th & Market Sts., Philada., Pa.

Agriculture usually elects its own secretary, but he was given to understand that in this instance the appointment of a secretary would be left to the Governor, and, to make doubly sure of the matter, addressed a letter of inquiry to the president of the State Board, Mr. A. B. Spreckels, and your correspondent has the president's letter in reply, in which he says "the appointment of secretary has been left to the Governor."

Will you please publish this in order to set me right in the matter?

J. S. TAYLOR,
Secretary California State Grange.
Napa, Cal., Jan. 6, 1901.

TO THE SUBORDINATE GRANGES OF CALIFORNIA:—The following resolution was presented to Napa Grange by the Lecturer of the State Grange and unanimously passed, and it is desired that every subordinate Grange in the State pass similar resolutions and forward same immedirtely to the Governor, who has the appointing of a secretary to the State Board of Agriculture, according to the statement of Mr. A. B. Spreckels, president of the board. J. S. TAYLOR,
Napa, Cal., Jan. 26, 1901. L. C. S. G.

WHEREAS, A vacancy has occurred in the office of secretary of the California State Board of Agriculture by reason of the resignation of Peter J. Shields, recently elected Superior Judge; and

WHEREAS, It is deemed advisable by those who are principally interested in the welfare of the Agricultural Society that a man shall be named for the place who will be a practical horseman, and also a broad man in affairs affecting the State's agricultural interests, a man who will be in close touch with the farming interests, and who will use the society's resources toward their development, and not one who will use the position for political purposes alone; and

WHEREAS, The United States Department of Agriculture was established and the secretary thereof made a cabinet officer through the efforts of the National Grange of the Order of Patrons of Husbandry, therefore be it

Resolved, By Napa Grange No. 307, P. of H., in regular meeting assembled, that we, the members of said Grange, on our own behalf and on behalf of all the members of our organization throughout the State, humbly but earnestly petition the Bonorable Executive of our commonwealth to appoint a man to fill the vacancy now existing in the office of the secretary of the State Board of Agriculture who will meet the requirements herein mentioned, and we would suggest the possibility of a wise selection being made from among our membership in this State. although a selection of any man meeting the above requirements, whether in or out of the Order, would be perfectly satisfactory to us.

The North pole is the mathematical point at the northern termination of the earth's axis. Whether land or water be there, the phenomena of the sun during the polar day or of the stars during the night would indicate its position.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING JAN. 15, 1901.

666,002.—CONCENTRATING TABLE—W. G. Dodd, S. F.
666,247.—MUSICAL SCALE APPARATUS—R. L. Fraisher, Glendora, Cal.
666,049.—SACK JOLTER—M. A. Gifford, Grafton, Cal.
666,245.—VALVE—H. G. Ginaca, S. F.
666,009.—BALL CASTER—M. C. Hall, Bakersfield, Cal.
665,901.—DOOR STOP—E. B. Hampton, Napa, Cal.
666,053.—SWINGING WINDOW—B. Hausmann, S. F.
666,232.—BOX STRAPPING MACHINE—Levy & Little, S. F.
666,023. — CENTRIFUGAL PUMP — H. Perry, S. F.
666,208.—GAS GENERATOR—J. W. Reeder, Goldendale, Wash.
666,068.—BICYCLE BRAKE—E. Sarvela, Whitesborough, Cal.
666,212.—MOLE TRAP—A. B. Simmons, Calistoga, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

SLIDABLE AND SWINGING WINDOW SASHES.—No. 666,053. January 15, 1901. Bernard Hausmann, San Francisco, Cal. This invention relates to a mechanism for sliding window sashes and means for disengaging such sashes from suspending cords on one side, so that they are turnable about hinges on the other side to swing inwardly, for the purpose of obtaining access to the outside of the sash and for other reasons. It consists in a novel construction of the hinges, the slidable parts in connection with which the sash moves up and down, a means for holding the sash in place when disengaged from the cord of the opposite counterbalance weight, and a means for attaching and securing said cord so as to hold it, and weights attached thereto in place while the sash opens about its hinges.

BALL CASTER.—No. 666,009. January 15, 1901. M. C. Hall, Bakersfield, Cal. The object of this invention is to provide a caster for furniture and like articles. It consists of a large ball adapted to form contact with the floor or other surface, this ball being contained in an exterior casing, within which are smaller balls which form a bearing for the larger one. These sets of small balls are turnable upon bearing rings or surfaces, and thus allow the main large ball to revolve freely in any direction.

STATE OF OHIO, CITY OF TOLEDO, } ss.
LUCAS COUNTY,
FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.
FRANK J. CHENEY.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.
{SEAL} A. W. GLEASON, Notary Public.
Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.
F. J. CHENEY & CO., Toledo, O.
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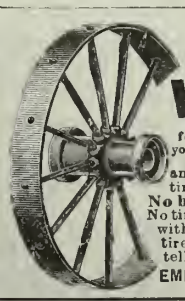

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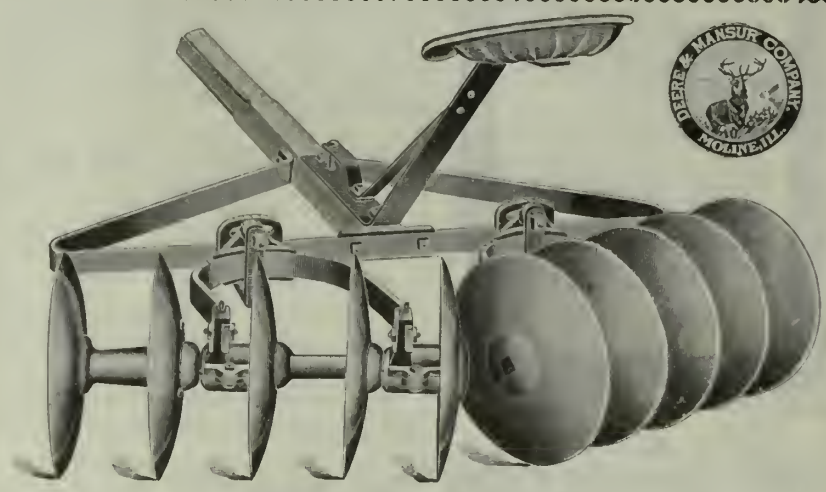

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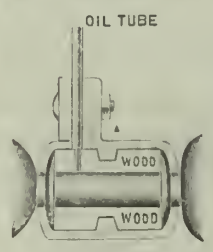

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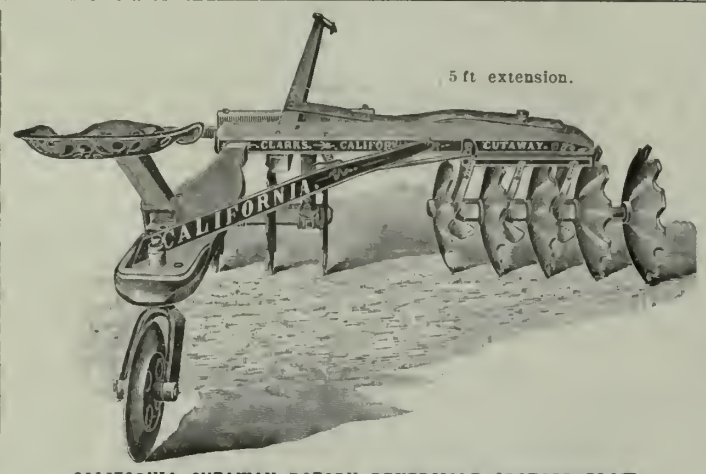

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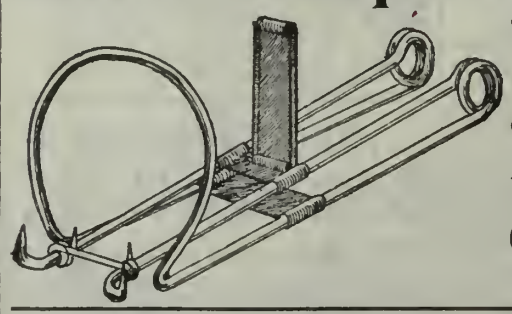

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Vol. LXI. No. 6. SAN FRANCISCO, SATURDAY, FEBRUARY 9, 1901. THIRTIETH YEAR. Office, 330 Market St.

California Horticulture at the Pan-American.

Now that the investigation at Sacramento of the affairs of the California Commission to the Paris Exposition is showing how a State display ought not to be made, it is timely to recur to the immediate opportunity which offers itself for better work. The All-American Exposition at Buffalo, New York, will open this spring. The buildings are advancing rapidly in construction in spite of the Eastern winter, and the development of the affair in other directions is also proceeding in a satisfactory manner. We announced in the PACIFIC RURAL PRESS of December 29th that over one-fourth of all the space in the horticultural building was awarded to California, and that it would be occupied in a striking manner. This space will be occupied by two organizations—the Los Angeles Chamber of Commerce for southern California and the State Board of Trade for the balance of the State. The latter organization has made an official announcement of its plan, which is to undertake the work without asking for a State appropriation. This will strike the people not only as right, but as wise, for a general impression prevails that State funds appropriated for such displays are not so effective as that provided by individuals and localities. Of course, relinquishing all appeal to the Legislature strengthens the appeal to counties, localities and enterprising individuals, and we trust it will not be made in vain.

We have secured representations of the horticultural structures at the coming exposition, and they appear upon this page. It is in the large central edifice, of which the front is shown, that the large space indicated has been secured for California. The smaller engraving shows the collocation of this structure. The whole congeries will be known as the horticultural group and will be situated adjacent to a magnificent court 3000 feet long, with a transverse court 1700 feet from east to west, besides subordinate courts. All of these open spaces are to be beautified with palms and other tropical plants placed beside the fountains and pools. To these will be added sunken gardens of elaborate arrangement, and formal flower beds wherever their presence will enhance the beauty of the courts. The various buildings of the exposition are to have red tiled roofs and the walls are to be tinted in a variety of colors, so that the brilliancy of the architectural works will vie with the blossoming beds to fascinate the lovers of fine color effects. Among the flowers and foliage plants will be many sparkling fountains to enliven the beauteous scene. The entire outer wall of the exposition ground is to be a bank of solid foliage. Many thousands of trees, shrubs and cuttings were planted last fall in preparation for the elaborate horticultural features. Large trees which fortunately were already upon the exposition site have been preserved by transference to places where their stately shafts of green would heighten the color effect in contrast with the brighter hues of the buildings.

The building to be devoted to the Department of Horticulture, of which F. W. Taylor is chief, is 220 feet square. It has two arcaded wings sweeping from the north and south facades to the eastward and connecting with other buildings to form a semicircular court. West of these arcades are the conservatories in which will be displayed the palms and other plants of tropical origin. The arcades leading from the main building will be kept gay the entire season with flowering and ornamental plants. The large building will be used for the display of fruits and various other exhibits pertaining to horticulture. The horticultural building will be one of the most picturesque of the entire group of large Exposition buildings. The loggias which form the eastern entrance will be richly adorned with frescoes. Two of these compositions will represent Ceres, the goddess of the harvest, bearing in her arms a sheaf of wheat, her chariot drawn by three lions led by Flora and Primavera.

The exhibits to be made by the leading florists of the United States will be situated south of the horticultural building. To these displays some six or seven acres of land will be devoted. In these displays there will be over 500 beds in which will be shown every popular flower known, from the low-growing verbena to the stately dahlia and hollyhock.

In a circular issued by the State Board of Trade, it is stated that contributions which will illustrate every phase of our industrial and social life are desired. It is hoped to make a collective exhibit where California may be displayed in miniature in a way to answer every intelligent inquiry that may arise as to what we are doing and can do, and to adequately portray the advantages California offers to the home seeker of the East and Middle West, thousands of whom desire to come here to reside, if the way is pointed out.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, February 9, 1901.

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The Week.

February is coming in with low temperatures and heavy rains, but no one is complaining, except that here and there sharp frost has nipped too venturesome trees a little. The effect on trees still dormant is beneficial and the added moisture has helped grass and grain out of the difficulties caused by the dry winds of the previous week. The very heavy rains at the south will be of incalculable advantage. Rain storms hard enough to stop street cars is a way Los Angeles has long sought, and San Luis Obispo is this year the banner rain county, which is a great deal better than cutting down trees for stock feeding. But such things have now passed into memory and may not rise again into experience for a century. New times are now on for all the good there is in them.

Wheat and flour are still going to South America, and barley to the East and to Europe, but amounts are not large. Wheat is rather weak but not lower, while barley is a little firmer for high grades, though the bears are very active in the operative market. Oats hold up stiffly—Eastern oats still coming to fill Government contracts. Corn is unchanged, though Eastern in large amounts is a shade easier. Beans are still strong, with whites especially rejoicing in Government patronage. Bran is unchanged but a little easier in tone, while other feeds are stationary. Hay bears the old quotations but is weak; holders are still trying to unload without breaking the price. Beef is quiet but strong, seemingly higher in the country than here. Mutton is firm—higher for wethers. Hogs are firm at the last advance and receipts moderate, some coming from the East. Butter is firm and advanced for fancy—the price was apparently dropped too soon. Cheese is unchanged but stocks are light. Eggs are in demand, but still prices are being forced down as low as possible. Some eggs are being shipped to territorial points. Poultry is in bad shape for all old stock, owing to large amounts of Eastern. Potatoes are unchanged and heavy for all but fancy. Onions are quietly held at old prices. There are still too many low-grade oranges, but fine fruit is firm. Apples are just in the same fix. Lemons are slow, although limes are higher. In dried fruits, jobbers are filling interior orders in a small way, but little is doing from first hands. Second grade raisins, known as Pacifics, going readily at the reduced rate, and so are seeded raisins. Both are good fruit at cheap prices. Some wool is going by the Isthmus, but sales are insignificant. Hops are inactive, few being either called for or offered.

The progress made by the California lemon during the last few years is one of the most gratifying facts of our horticulture; but it is not widely noised because the chief production is confined to a narrow territory between the mountains and the sea in southern California. Still, shipments are now getting very respectable and increasing rapidly. We are not surprised to find one of the leading lemon men of the south, Mr. R. C. Allen, of Bonita, San Diego county, returning from the East to report that the Eastern feeling toward the California lemon is more favorable than he ever found it before. This is the first year that our fruit has been shipped in large quantities into the large Eastern cities, where the foreign product has hitherto held sway. The superiority of the California product is so marked that it is already in use in all of the leading hotels and on the fruit stands. Boston and New York are new markets for us, but we are going to win them. It is now the almost universal opinion of the fruit men in the East that the foreign product will soon be displaced by our lemons. We are reaching farther and farther each year. Omaha sees practically no foreign lemons now, and it will not be long before we will be able to say the same thing for St. Louis and Chicago. This is a report worth bringing back, and Mr. Allen will be widely thanked for it.

The phylloxera is showing up in places which have for a long time proudly claimed immunity, and it seems a fair conclusion that it will ere long get everywhere that a European vine root remains to please it. Our vineyards must all ere long be upon resistant roots and we are glad that readers of the PACIFIC RURAL PRESS have been kept up to date in possession of information concerning them. It will, of course, be years before all non-resistant vineyards will be reached and there is no reason to get hysterics about the insect unless they happen to be on the other side of your line fence or otherwise close upon your track, but it is clearly not wise to put in much money or time in starting new vineyards which the pest can eat up. Every district should begin at once to test different resistant roots in different soils so that there may be demonstration of what is best, and by beginning early all intending vineyard planters can grow their own resistants, so that they will have plenty of cuttings for replanting. Every one should give attention to this subject now, and we shall be able to hold on to our vineyard products. It is not an untried proposition. France has restored her interests in the same way, and California is fast doing it in the regions first invaded.

We find in the transactions of the recent large assembly of flock owners at Salt Lake that the California sheep interests are not dead, but only sleeping, and we find indication also that they will awaken. There was organized at that assembly a Pacific Coast Stud Flock Club, whose aim shall be to establish the purity of the blood of the various flocks recorded in the register of the club, maintaining and improving their standard of excellence and giving to the members mutual assistance in the breeding and handling of their stock, as well as extending the markets and enhancing the value of the stock recorded in the club register in every legitimate and honorable method. It is an organization which should command the interest of all who are handling thoroughbreds for their own sake. The president is Mr. I. G. Edwards of Hay Creek, Oregon; the member of the Executive Board for this State is Mr. Harry Quinn of Delano, and the secretary of the club is Mr. J. H. Kirkpatrick of Stockton, whom many readers will remember as long prominent in the pure-bred sheep interest of the State. Mr. Kirkpatrick will give all desired information about the club, and we hope he will be widely called upon for it.

We have already done up the Pan-American on fruit lines, but there will be chickens in it largely also. The poultrymen in the past few years have seen the industry double many times, until to-day it exceeds in value any single farm crop. The annual sale of eggs, poultry and fancy birds for breeding purposes in the United States and Canada exceeds one billion dollars. The proposed show at the Pan-American will be fully adequate to the great interests involved. The time will be October 21st to 31st, and the accommodations will be all that are desired. The stables, covering ten acres, will all be devoted to the display. What a racket may be expected from ten acres of prize roosters!

QUERIES AND REPLIES.

Irrigation Methods.

TO THE EDITOR:—Is there a way (known as the apron system) of lifting water out of a flume into a lateral ditch for irrigating alfalfa and not having to cut flumes? Is there a successful way of watering trees by hauling water with team and emptying water with a box. I have four acres not under ditch, 60 rods from the Columbia river, that I desire to set out in trees provided I can do so without too much work and expense.—READER, Wenatchee, Washington.

If the water has considerable fall in the flume and the flume is pretty full some can be raised out of it by a board or apron sloping up stream and reaching part way down into the water, and having splash boards at the top to catch and direct the overflow. The apron has to be raised or lowered to regulate the amount thrown out. If the flume has, however, only slight fall, a board dam will raise the water so that it will spill over the sides and an opening in the dam with an adjustable slide will make it possible to spill over what you want and allow the rest to go on its course down the flume. Water is, however, usually taken out of flumes by openings in the sides which can be readily regulated in size or closed entirely.

The use of short pieces of pipe or wooden boxes set vertically in which water can be poured to soak away below is better in theory than in practice. Such things are in the way of cultivation and the ground packs around them and water is lost by evaporation. It is better to make a fresh hole or a trench to be covered when the water has soaked away and keep the ground all cultivated around the tree. Hauling water is expensive and the cost increases, as the trees need more and more, faster than the worth of the fruit. It would be a better proposition to put a pump in the river below, force the water to high point in the four-acre piece and distribute from that point by ditch, etc.

Shaping Apricot Trees.

TO THE EDITOR:—What can I do with my apricot trees? They were planted last spring, and I think are too high. I was told by a practical man to cut them off 30 inches high. A great many of the trees are 1¼ inches in diameter. Would it be safe to cut them off, say, 16 inches or 18 inches from the ground? There are more or less spurs on them. Would suckering them last year stop them from branching out and making new tops if cut back? Eight out of ten trees have clear bodies 16 or 18 inches from the ground.—SUBSCRIBER, San Jose.

If you have pulled off all the lower shoots it will be rather difficult to form new heads lower down, because pulling off a shoot usually takes out the dormant buds at its base. With such young trees, however, lower shoots are apt to break out and may be retained to make branches. We would not cut back to 16 or 18 inches, unless you have spurs from which shoots can be expected at once. We would shorten in the top and keep a lookout for lower branches from new shoots as they appear. We are not impressed with the short stem and all the branches in a bunch at the top of it. We would prefer to have a 30-inch stem and the branches more widely spaced upon it. Sixteen or eighteen inches from the ground to the lowest branch is not a bad distance for your region, though it would be too high for the interior valley. Do not shear the trees now to a certain height. There will probably still be a chance to develop many branches where you want them.

Rose Troubles.

TO THE EDITOR:—Will you suggest treatment for rose bushes when the leaves continue abnormally small and the blossoms are scarce and unsatisfactory? Some of the bushes are less than a year old, and they do not respond to irrigation nor to dressings of manure. Will you also tell me if this is red spider on the enclosed specimens? All the new shoots are eaten in a similar way; but I thought red spider could not exist in winter.—FAIR OAKS, San Mateo county.

One can do little more than guess at the answer. Bushes which are now less than a year old have hardly established themselves well enough to make their best growth, nor can any rose bush make very free growth now unless it is in a very warm situation. The temperature has been too low for the roses in ordinary situation to do their best growing

and blooming—this will come later in the winter and spring. If your roses do not pick up then, the soil should be looked into. There may be some touch of salt or alkali which injures the roots. There is no red spider active now in the open air, nor does the red spider ever bite off things; he just roughs up the leaf surface. The eater of your leaves is a caterpillar which ranges over a wide distance and goes to hide between times. Sometimes you will see him holding himself out at body's length and perfectly still, so that birds will think he is a dead twig and pass him by. He makes a loop when he walks and is often above an inch in length and of a light brown color. This is the only insect we know that eats off leaves in just the way yours are eaten. Your rose leaves have a little touch of mildew, but not enough to hurt. If this increases later, sulphur them.

Spray for Curl Leaf.

To THE EDITOR:—What is the best spray for curl leaf on Lovell peaches, and how late is it advisable to use it?—READER, Chico.

We have given this information in former years, but it will do to repeat, as it is just the time to use it in many places. The horticultural commissioners of Sutter county have just published a new exhortation to peach growers, using Prof. Pierce's formula, viz.:

5 pounds sulphate of copper (bluestone).
5 pounds quicklime.
45 gallons water.

Dissolve the copper sulphate (bluestone) in a barrel containing ten or twelve gallons of water. Slack the quicklime and thin it to a creamy whitewash. Pour the whitewash very slowly through a wire screen into the copper solution. Stir the mixture thoroughly and add enough water to make forty-five gallons in all. Stir occasionally while applying as a spray to the trees. In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron vat is used the copper will go to the iron and and the effect of the spray is largely neutralized. Apply the remedy cold and as soon after it is prepared as possible. Never allow it to stand over night. In a letter to the horticultural commissioners of Sutter county Prof. Pierce says that the above wash is a fertilizer and invigorator of the tree and will effectually prevent curl leaf if applied very thoroughly from one to three weeks before the buds open. Of bluestene only the best quality should be used. It often contains more or less iron sulphate, or copperas, but this is readily discernible, and a sample that contains any considerable amount of rust color (copperas) should not be used.

Irrigation with Holes and Trickles.

To THE EDITOR:—Though I have both your works, "California Fruits" and "California Vegetables," (and, by the way, they are almost beyond a money value to me) they do not quite answer the following question: The grounds about my ranch house, the soil of which is exceptionally rich, deep, foothill loam, are so laid out that a number of citrus and deciduous trees can not well be cultivated. If I cover the ground with sand, which will no doubt become quite hard in time, sub-irrigate with pipes or holes, liquid fertilize, with no cultivation whatever, will the trees continue to thrive?—HOLLYWOOD, Los Angeles.

Yes, you can keep the trees in good growth and bearing by treating them as you propose. Make holes at a distance from the tree trunks and allow the water to trickle into them in a very small stream for a long time, so that it may soak in deeply. It will prevent loss by evaporation if you can keep the sand loose by occasional deep raking, but it will do the other way if you desire a smooth surface. We would not advise this method as a substitute for cultivation, but it will do under the conditions you describe.

Replanting After Root Knot.

To THE EDITOR:—After the crown gall or black knot has killed a tree, what can be done to prevent the new tree from taking the disease, if it is so contagious, for it is almost impossible to get the knot all out of the ground, as it is often found on the small roots? I want to reset some prunes that have been destroyed by it.—SUBSCRIBER, Morgan Hill.

There has been no demonstration of this matter and consequently there is the widest possible chance to suggest methods. The use of lime around the sides of the excavation or sprinkling with bluestone water will probably come first to mind, and either of these may kill some spores of the knot disease which may be in the soil. We should rely most upon making quite a large excavation and refilling with fresh soil and planting the tree in that. Afterwards about all that can be done is to examine frequently and keep the knots from forming at the root crown. They do less harm on the small roots, and we doubt if they can ever be prevented from forming there.

Growing Potatoes From Sprouts.

To THE EDITOR:—Can you give me any information as to the success of planting potatoes (Irish) from sets. I have read both Mr. Wickson's "California Vegetables," and Farmers' Bulletin No. 35, and in neither is this method discussed. In the ponderous volume of "Facts for Farmers," by Solon Robinson, a somewhat antiquated but seemingly useful work, this method is mentioned and these advantages are claimed for it: The young plants are as hardy as cabbages and can be planted with as much speed as tubers. One bushel of seed goes as far as ten the old way. Have your ground fresh plowed at time of transplanting and so get a good start of the weeds. No small potatoes; they are of uniform size. Has this way of growing potatoes any standing now?—J. R. M., Boulder Creek.

Growing potatoes by forcing out sprouts and planting them as long as the tuber supplies them is a way to get a maximum yield from a minimum amount of seed potatoes. It is resorted to when one wishes to win the prizes which the seedsmen sometimes offer for the greatest yield from a few pounds of some new variety. It is not a practical method otherwise because the culture of the ground and care of the sprouts are more exacting than are required by the ordinary way of growing from cut tubers. The sprouts are torn from their natural base of supplies and have to be coddled. This costs more than the saving in seed amounts to several times over. Such "Facts for Farmers" as Mr. Robinson gave are what brought "book farming" into such disrepute a generation ago.

Oranges on Sour Stock.

To THE EDITOR:—I expect to plant a few orange trees. I am advised by a neighbor to send to Florida for wild orange trees, plant and bud them, as that way is cheaper. Is it likely they will stand the winters here as well and make as good trees and bear as well as trees grown here?—W. S. SMITH, Del Rey.

It is not necessary to send to Florida for sour stock. There is plenty in the hands of California nurserymen as they began to use it to some extent nearly ten years ago. It is, however, quite a question whether it is any better than good sweet orange stock. It has less gum disease, but it is not as gum proof as was held at first. If you only want a few orange trees you had better buy budded trees and save time.

Not the Woolly Aphis of the Apple.

To THE EDITOR:—Enclosed I send some aphis found on the roots of the common sorrel. Please let me know if it is the same as the woolly aphis infesting apple trees. We intend to set the land in which those were found out in apples.—M., Aptos.

There are a number of woolly aphids. The one you send is not the one infesting the apple, nor is there any reason to think that it will take to apple roots.

Hogs and Artichokes.

To THE EDITOR:—Can you tell how to persuade hogs to eat Jerusalem artichokes? I was told hogs liked them, so I planted. Now they take as much notice of them as pebbles.—GROWER, Bakersfield.

Let the hogs get a little hungry and if they still are shy smash a few tubers and sprinkle a little ground feed of some kind on them. They will catch on and soon learn to dig for them.

Kerosene Emulsion Not Dangerous.

To THE EDITOR:—In recommending the coal-oil emulsion as a spray for the peach moth, at the Farmers' Institute held at Newcastle, you suggested its use during December. There are a number who question the advisability of using it at this time, being afraid that it is too late in the season and that injury may now result to the young buds, etc.—J. F. MADDEN, Newcastle.

The treatment for the hibernating larvæ of the peach moth should begin earlier in the winter, but it is better now than not at all. If kerosene emulsion is properly made, and the agitation continues until the true emulsion appears, it is not dangerous to young buds or foliage. Lime, salt and sulphur have to be used before the buds start, or it is likely to be injurious. It is not so with the kerosene emulsion.

Linnets and Grape Pomace.

To THE EDITOR:—A few years ago the linnets played havoc with our prune buds, seemingly pulling them out without eating them. At that time I tried to poison them by sticking poisoned apples on the limbs of the trees. I also shot hundreds of them with a twenty-two rifle, but found both methods inadequate. At that time whale oil soap was recommended to be sprayed on the trees, but this seems rather unsatisfactory during a rainy season. This year I spread all my grape pomace on the prune land to loosen the soil, and I find the linnets stay there almost all day, picking up the grape seeds. If they like grape seeds, could I not have an amount of it poisoned, or do it myself, and mix with the pomace? How should I prepare it? R. SCHMIDT, Calistoga.

For the cheapness of it we should first try stirring white arsenic into the pomace, say at the rate of one pound of arsenic to ten of pomace, and watch for results. If that does not kill them, dissolve an ounce of strychnine in a pint of vinegar, add a little water and molasses and stir that into ten pounds of pomace. It will take a little experimenting to determine the best way to poison the pomace and whether the birds will take it. You will, of course, have to look out for your poultry, etc.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 4, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

COAST AND BAY SECTIONS.

Favorable weather conditions have prevailed during the week, and considerable progress has been made in plowing and seeding and the pruning of trees and vines. Severe frosts occurred toward the close of the week, and it is reported that almond buds, which in some sections were about to bloom, were considerably injured. In other respects the cold weather was regarded as beneficial. Rain has fallen in nearly all sections. Grain is in good condition and making satisfactory growth. A large acreage of wheat and barley has been sown, and this is being rapidly increased. Large crops are expected. Green feed is abundant. Trees and vines are in good condition.

SAN JOAQUIN VALLEY.

The weather has continued cool during the week, with heavy frosts in many places and light rain at the close. The cool weather is regarded as generally beneficial, though retarding the growth of grain to some extent. Grass is also making slow growth, but green feed is plentiful and cattle are in good condition. Grain is looking well, and, if favorable conditions prevail through the season, will yield an unusually heavy crop. Almonds and peaches are budding in some places. Pruning continues.

SACRAMENTO VALLEY.

The weather during the week has been quite favorable for farming interests. The low temperature has served to retard premature budding of deciduous fruits, and the severe frosts have caused no damage. Northerly winds toward the close of the week dried the upper soil rapidly, and farmers were enabled to resume plowing and seeding to some extent. Light rain followed on Sunday, but it will not be detrimental except in delaying farm work on the low lands. Grain continues in excellent condition, and pasturage is abundant. Trees and vines are also in good condition. Pruning is progressing. Vegetable planting will commence soon.

SOUTHERN CALIFORNIA.

Light rain has fallen during the week, with snow and hail in some places on Friday. Cooler weather followed, with heavy frosts Saturday morning in many localities, but no damage has been reported. All crops are looking better than for several years, and prospects for a heavy yield are excellent. A large acreage of grain has been sown, and further planting will be done as soon as the weather permits. Green feed is plentiful in all sections. Deciduous fruit trees are budding in some localities. Lemon trees are heavily laden with choice fruit.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Feb. 6, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	...	.....	35.13	25 55	...	.
Red Bluff	2.14	17.87	15.26	15.74	28	60
Sacramento	2 00	13 32	13.69	12.05	30	52
San Francisco	1.22	14.23	14.57	14.16	42	54
Fresno	.85	8 30	6.15	5 34	34	58
Independence	.16	4.69	2.09	4 36	20	50
San Luis Obispo	4.08	25.58	12.50	12.19	26	58
Los Angeles	2.65	11.91	4 57	10.06	32	64
San Diego	1.18	4.98	2.65	5 65	34	60
Yuma	.04	12	.76	2 19	30	68

HORTICULTURE.

Hillside Cultures.

W. M. Bristol of East Highlands is a close student and good observer and what he says, in the Citrograph, about handling hillside orchard lands in San Bernardino county should be widely interesting.

THE IRRIGATED HILLSIDE.—A very large portion of the land which is devoted to citrus fruit culture in south California may be properly termed hillside. Uplands and hillsides in the East are not highly esteemed, as a rule; but in the arid southwest, where all the trans-Mississippi maxims and tenets are upset and nullified, the highlands rank first in horticultural value.

It should be understood, however, that land of this character requires very careful management. When the primeval vegetation, which has protected the soil on the slopes against the rains of centuries, is removed, there must follow a system of cultivation which shall afford a like protection. It is safe to say that no hillside farmer in California whose experience dates back to the wet winter of '83-'84 ever turns a furrow without the storm-water problem in mind. But there are many orchardists along the foothills, from Pasadena to Redlands, who have come to California since 1890 and who, consequently, have not yet seen it rain. They would count it pessimism to be told that their present method of cultivation will result in waking some winter morning to find their orchards a series of gulches with most of the top soil going seaward. The pioneers of '62, however, if they believe that history repeats itself, will say it is easily possible.

WATER SUPPLY.—The prime requisite in hillside fruit growing is an abundant water supply. If this is available, the storm-water problem is easily solved. This may sound like prescribing the hair of a dog as a cure for his bite; but, as on the western prairies fire is the most effective weapon against fire, so, along our foothills, the paradox will be proven that water properly handled will prevent damage and loss during the winter months.

Of course no tract of land can take care of any storm-water except that which falls on it. Every orchard must have a waste water way. No orchard must exceed 40 rods in length, and the grade on which irrigation water is to run should not be less than 1% nor more than 2%. These requirements may seem exacting, but, excepting on very rolling land, they are attainable.

ORCHARD COVER.—About the first week in October there should be sowed broadcast in the orchard some winter growing plant, preferably of the leguminous family—peas and lupins being the best. The seed should be covered by harrowing or cultivating, and, if the slope is heavy, the implement used should be run up and down hill—that is, at right angles with the irrigating furrows which are to be made later. These furrows should be made with a reversible (hillside) plow, the dirt always being turned down hill. When the rain comes it will find its way into them readily, the small cross furrows left by the cultivator facilitating its flow into the main furrows. This system avoids the formation of any false or imperfect furrows which are likely to catch and hold water for a time and then, during a hard shower, break and turn a double portion into the true furrows just at the moment when they are already bank full. These furrows, which are to remain open during the winter, should not be too close together, four between tree rows (where the distance is not more than 20 feet) being better than a greater number, for two reasons. First, the intervening strip of ground being wider, it is less likely to break; and second, less rainfall penetrates the soil where there are many furrows because their sloping sides facilitate run-off.

The orchard is now ready for irrigation, which will settle the loose earth, start the vegetation and put the land in shape for the first rains. If these do not come promptly, it is only necessary to run water through the furrows and leave them, as before, without cultivation. It is believed by those who have followed this practice that it hastens the ripening of the orange and lessens the danger of "puffing," the hypothesis being that nitrification in the soil is retarded by the absence of cultivation.

WHEN TO PLOW UNDER.—Many who advocate the growing of a winter crop advise that it be plowed under in February. But, as heavy rains often fall in April, it is plain that the land would thus be without the protection of either furrows or vegetation. Here, again, is apparent the desirability of abundant water, for it has been found that, no matter how rank the vegetation becomes, water turned into the furrows will find its way through them, so that the land may be repeatedly irrigated and plowing deferred until May, with benefit to the orchard and its summer tilth and with a saving of labor and expense to its owner. That the roots of the winter crop bind the soil and prevent washing is apparent at a glance. A moment's reflection will show that the surface portion of the crop performs an equally important part. Every irrigator knows that muddy water penetrates the ground very slowly, because the fine particles in suspension clog the pores of the soil. A heavy shower on bare ground means a flood of muddy water; but if the ground be covered with vegetation, the force of the falling drops is broken, the water reaches the ground gently and, in its clear condition, readily penetrates it.

Oranges and Olives on Hardpan.

TO THE EDITOR:—On page 19 of the PACIFIC RURAL PRESS of Jan. 12 a question is asked about oranges on hardpan. I will say this to your Tehama reader: Ten years ago I planted nine Navel orange trees on 20 inches of soil over hardpan. They do well with plenty of water. I planted out six Mission olives on the same land. All I regret is that I did not put out 300. Had I done it I could have had a nice income. There is a demand for properly pickled olives. In regard to both oranges and olives, they grow and bear profitably on our plains. I regret I have not more of them. THOS. WAITE.

Perkins.

Of course, the plenty of water has much to do with it.

Extensive Fruit Tree Planting at the North.

In his report to Gov. Rogers of Washington, Commissioner Baker says that probably a million trees will be planted in the State during the present season. Three-fourths of a million more were planted last year and nearly a million in the two years preceding, making for the four years a total of two and three-quarter million trees planted in the State, nearly doubling the acreage planted previous to this time, from which it may be seen that fruit growing is fast becoming one of the leading industries of the State.

In his recent report Secretary H. E. Dosch of the Horticultural Society estimates the Oregon orchards at 53,300 acres.

FRUIT MARKETING.

The New Organizations.

TO THE EDITOR:—I send you a clipping from the Sacramento Record-Union, which explains what has been done up to the present time in organizing the fresh fruit growers.

In the matter of the Fruit Growers' Council, it does not appear that anything of value can be accomplished until more has been done in drawing together more closely in their separate associations the orange growers, walnut growers and fresh fruit growers.

If any of the members of the committee appointed at the last annual convention to deal with these subjects desire to make suggestions or wish for a meeting of the committee, I shall be glad to comply with their wishes. M. THEO. KEARNEY.

Fresno, Jan. 30.

We alluded to this subject in our issue of Jan. 19th and are glad to have the above note from Mr. Kearney and to give additional particulars. In the course of an excellent address in opening the meeting, Mr. Kearney said:

A BUSINESS-LIKE APPEAL.—On every hand we are met by combination and are compelled to pay combination prices, while we alone remain unorganized. We must meet combination by combination or we will forever remain laborers from the product of whose toil others and not ourselves will fatten.

We have fruit to sell to the canners, they are combined, therefore we must combine in order to be able to deal with them on equal terms. We have cured fruit to sell, therefore we must organize to fix the price of our product and maintain the market for those we depend upon to distribute it for us. We have fresh fruit to sell for Eastern shipment, and we must all join hands and declare that not one pound of that fruit shall leave this State until it is paid for. If all of it cannot be sold as fresh fruit and for cash, then such portion as is not sold to the canners and for home consumption, or is not cured, may rot under the trees. We will at least avoid the loss of money expended in picking and packing and shipping.

My friends, we have for years tried consignment of our crops and the result is failure. What reason have we to believe it will be any better in the future? Certainly none that I can discover. Then why not stop it now. We can not be any worse off if we adopt the cash on delivery system, and there are many sound reasons for believing that we will be much better off. Therefore, organize. Let us inscribe on our flag "Cash on Delivery," and nail that flag to our mast. Fight for that principle like men, and my word for it, the victory will be ours and we will achieve the full measure of prosperity that has come in the same manner to bless the orange, walnut and raisin growers.

Then let your officers say to shippers of fresh fruits: You are merchants; we will leave it to you to deal with the question of a proper distribution of the fruit in various markets, with the question of freight rates, rapid transportation, refrigerating car contracts, icing charges, etc. We will sell you the fruit for cash at a reasonable price, and you are heartily welcome to a reasonable profit as a return for the risk, skill and capital employed in the enterprise. If you show good business management, we shall be happy to continue the arrangement indefinitely; if not, we may be forced to establish our own distributing agencies. It rests with you which it shall be.

Let me say to the canners and shippers that if they will stop a moment and consider this matter in this new light, they will find that the organization of the fruit growers will prove a great advantage to the dealers in fruit as well as the growers, and it should receive cordial support from you. The crop will be under complete control; the market will thus be protected from cutting of prices, and you will have but one organization to deal with, which will be managed by business men. You will thus be able to plan operations a long time ahead, make contracts and do business on a sound basis, and not as a desperate gamble.

PERMANENT ORGANIZATION.—After a free discussion in which many speakers participated, permanent organization was agreed upon as follows:

First.—That the organization be formed under what is known as the "Co-operative Law of 1895 of the State of California, entitled an Act to provide for the incorporation, operation and management of Co-operative Associations."

Second.—That the name of the organization be, "The California Fresh Fruit Association."

Third.—That the purposes of the organization are to handle fruits of its members in such a manner as to give them the largest returns possible.

Fourth.—That the office and principal place of business be in Sacramento.

Fifth.—That the number of directors be fifteen.

Sixth.—That an executive committee of three, including the president, who shall act as chairman of the committee, shall be chosen from the Board of Directors, and shall devote all their time to the business of the Association.

Seventh.—That the term for which said Association is to exist is fifty years from and after the date of its incorporation.

Eighth.—That the membership fee shall be $5, payable immediately upon the signing of a membership card.

THE DIRECTORS.—After much consideration the following were chosen the Board of Directors to serve throughout the year: B. F. Langford, San Joaquin; Wm. Johnson, Sacramento; E. I. Galvin, Sacramento; F. K. Chadbourne, Solano; H. W. Meek, Alameda; A. D. Cutts, Sutter; J. F. Madden, Placer; J. W. Anderson, Yolo; T. W. Madely, Placer; I. N. Barton, Placer; S. L. Turner, El Dorado; O. B. Olufs, Fresno; A. R. Sprague, Los Angeles; Geo. H. Cutter, Sacramento.

E. I. Galvin of Sacramento was unanimously elected as permanent chairman; T. W. Madely of Placer County secretary and treasurer, and George H. Cutter third member of the executive board.

THE STOCK YARD.

Encouraging Introduction of Fine Stock.

TO THE EDITOR:—My experience gained last year while endeavoring to introduce Ayrshire cattle into this county from Brandon, Vermont, has led me to believe that one of the greatest drawbacks to the improved live-stock industry of this State is our great distance from the important breeding centers and the cost of transportation for single individuals or small lots. I also believe that the most successful effort for the improvement of our live stock will be by devising some plan for reducing the cost of transportation for pure-bred breeding stock. The enclosed clipping from the Farmers' Advocate of London, Ontario, Canada, shows how the people of the Northwest Territories, Canada, laboring under similar disadvantages, propose to overcome them:

The Government of the Northwest Territories, being fully seized of the importance of improving the quality of stock of the country, have undertaken to render substantial aid to those desiring to bring in pure-bred stock. The Department of Agriculture has arranged with the stock breeders' associations to have stock collected and sent through in car lots to any point in the Territories, the Government to pay all expenses but $5 per head, which the importer will be called upon to pay. Each purchaser can arrange through friends or otherwise for the purchase of the stock. This arrangement should prove beneficial to the live-stock interests of the East, as well as the Territories in facilitating and cheapening transportation.

Should not our great State be equally as energetic? The cost of shipping by express is almost prohibitory for the average breeder, and the necessity for a man in charge to care for stock when shipping by freight also renders this way unavailable except in carload lots. Until some better plan can be devised, could not our State University, through the proper department, undertake to superintend some co-operative movement for the shipment of pure-bred breeding stock, so that the breeders of this State could secure transportation for single animals at car-

load rates? Our success here in Santa Barbara county last winter leads me to believe it practicable. Our total cost for transportation from Brandon, Vermont, to Santa Barbara was for two-year-olds $30 each, yearlings $25 each, calves $20 each, and I am confident that, with a little better planning, these prices can be reduced several dollars per head. Each person, if he so desired, could make his own arrangements, through friends or otherwise, for selecting and purchasing his own stock and have it delivered at one of the designated shipping points, as the movement would also be beneficial for the stock interest of the East. I think the different stock breeders' associations could easily be prevailed upon to select some of their members and back them up with a guarantee for honest and competent service, to select and purchase stock of their respective breeds when it was so desired. This is simply offered as a suggestion. Let some one come forward with a better plan, but give us cheaper transportation for pure-bred breeding stock. JAS. H. HESTER, V. S.

Santa Barbara.

The suggestion is a very good one to think about and discuss. It may be feasible for the animal experts at the College of Agriculture to do something in this line. Dr. Withecombe of the Oregon Station at Corvallis has just participated in a large selection and introduction in which the Oregon Agricultural College and private breeders co-operated. If we can only get wide-awake on better live stock, we can do almost anything. Meantime the local co-operative way, by which Dr. Hester secured the Ayrshires for his neighbors and himself, is open to any community of people who can work together.

THE POULTRY YARD.

Whence Came California's Improved Poultry?

Dr. S. L. Roberts of San Diego prepares for the Poultry Monthly a historical sketch of the importations of improved poultry to this State from pioneer times onward, which our readers will find very chatty and interesting. Some of our readers have been in the business almost from the beginning, and if they have other facts which should be recorded for the benefit of the future historian we would be pleased to receive them for publication.

AWAY BACK IN THE FIFTIES.—The original parentage of all the choice fowls in the Pacific coast States of to-day came from breeders east of the Rocky mountains, and it might be said they came overland, as but few were brought around the Horn, or by way of Panama, and those only that were of the first importations. In the fifties and sixties, before the Union Pacific and Central Pacific railways strung their wires, a few good birds were landed in San Francisco from steamers; but these were in the hands of the very few who ordered them 'round just to satisfy a whim, or please an individual fad. Among this few was William Trask, who in the spring of '56 imported two trios of Cochin Chinas, as they were then termed—birds that proved to be layers of two dozen eggs per annum, except the male; they "laid" for food from morning to night. Elisha Cummings brought 'round by water three Chittagongs—the flour-barrel type, understand. This was in 1859. These fowls attracted a deal of attention because of their great size. They were something new, even in the East, and were at once in favor as they became more generally known, for the reason that they were so very different from any domestic fowls people in this country had ever seen, and were "equal to a turkey when dressed." They also had large musical voices—the cocks—the crowing being in length equal to the extension of the neck.

LATER INTRODUCTIONS.—In 1862 James Overton, Sacramento, outdid every other importer by bringing around twelve Brahmapootras, "just over from India." These proved to be better layers. They—all three kinds—had "feathered legs." That was something. It was a novelty. Folks like new things. Then came the railway, and with its coming came everything else in the way of farm stock of all names and kinds.

But in the eighties California, like every other progressive State, began to feel the pulsations and quickening caused by the poultry embryo with which the country was pregnant. The paturition gave birth to a profession. The profession brought the American products. The evolution of fowl culture in New England and the Middle States was a revelation. It bore witness to the ingenuity of selective agencies by man in the production of domestic economics, hardly surpassed in beneficence by any yield of modern mechanics or æsthetics—science or art. This fruit was the Plymouth Rock (barred) and the Wyandotte (silver). These products revolutionized poultry culture in America. They gave to Americans another resource upon which to rely for the comforts of home and the luxuries of the hour of leisure. The Pacific States were not slow in appropriating some of the wealth of the discovery. Call it "invention," if you choose. Are not inventions discoveries? Although the Rock and the Wyandotte flocked to our shores by the thousands, as it were, still there were those who worshipped at the shrine of the Mongolians and Cochins—now made better, and Brahmas—more lordly than ever before—were loth to accept second places in private or public display. One devotee spent $4500 in less than three months for Light Brahma blood, the late E. C. Comey, Massachusetts, furnishing the royal feather. Albeit the advent of the Rock and his co-efficient brought better layers than their feather-toed uncles (?), and better layers pleased the women folks and plumped out the markets. Californians believe in big things or no things, and so went in for the Anglo-Saxons hand-over-hand. And to this day this brace of birds may be said to lead all others, as did the name of Ben Adhem, once upon a time. Not that breeders love their Brahmas and Cochins less, but love their Rocks and Wyandottes more.

CALIFORNIANS GOOD CUSTOMERS.—Our people are generous buyers. During the past fifteen years tens of thousands of dollars have annually gone from this seaboard to breeders over the range from Denver to Dover, from England to New England. Eastern breeders have fared sumptuously upon the proceeds from the Pacific. Almost every known variety and sub-variety known to the book has been planted on the soil of the Pacific coast States; and this regardless of cost there and exorbitant costs of transportation. Our folks have asked for the best and paid the prices demanded for the best. What has been the quality of stock so purchased? In some instances very excellent, in others some disgustingly inferior. I may say that in the majority of cases the stock received has been of such quality as we here regard as second class, although bought upon representations that the goods were A1, first class, the best to be had, skyscrapers, sure winners, hot stuff, rattlers, champions of excellence. I am happy to admit that now and then our buyers receive just the sirloin ordered. There have been purchases that reflected credit upon the sellers—deals that were honorable and praiseworthy; but too often it has seemed that the Eastern seller took it for granted that the Western buyer—especially the far Western one—has been unable to distinguish between a fowl of merit and a fowl of demerit, and so has been incapable of appreciating the best—that a poor bird was as good for this man of the West as a good one.

PRICES EAST AND WEST.—Whether this seeming has been unjust, it is not in my place to say; but I am willing to say this much to the credit of the down-East breeder: Prices on all his stock range higher than the prices range here on the coast, assuming the quality of stock to be equal, one with another. Taking this view of the matter, the prices asked by the Eastern seller are made to appear relatively high to the Western buyer. Illustration: A has a bird out West for which he asks $15. B has a bird of equal merit, no more no less, for which back East he asks $40. Let us say this $40 bird is bought by A. When it is received, A says: "Why, this crack bird is no better than my $15 one! I thought I should have received something extra fine." His argument is good, but it is based upon a misunderstanding of the premises. And this misunderstanding has been the cause of much ill feeling toward the Eastern seller. The Eastern seller wonders why the customer should be dissatisfied because he labors under a misunderstanding of facts as they are in the West.

But the man out West is learning a little every year, and one of the things he has recently learned is the fact that, if he desires stock that nearly approaches perfection, he must make it, even as the man back East made his. And why not, to be sure? Is not the Yankee inventiveness pretty generally disseminated?

THE ROSTER OF THE BREEDS.—Of late years the breeds most generally brought from the East have been Barred, Buff and White Rocks; Buff, Silver and White Wyandottes—principally the White, but also many of the Buffs; White Leghorns—whereas for a long time it was the Brown and the Buff; Black Minorcas have come in strength; Buff Cochins have dropped from the big run they had five or six years ago, but are still sent for quite largely; Light Brahmas and Partridge Cochins have not held their own, but do come to the old veterans. Any of these breeds and all others find conditions here much more pleasant and conducive to growth and longevity than those to which they had been accustomed. This coast is nature's own Grove of Daphne for fowls. Dr. Felch says the East can grow chicks faster than the States bordering on the Pacific can. My experience differs from his. There is no adverse possession here.

If your Eastern breeder would please his customer and have him return with further orders, first let him explain prices in a comparative way. This he can do by inquiring of his would-be patron as to how such and such birds range in prices with him. One of the mysterious things in our culture is the fact that where fowls are most numerously bred and exhibited there prices rule highest for both exhibition and breeding stock.

CALIFORNIA BIRDS FOR THE EAST.—Now, though California is in this profession, it is not an uncommon occurrence to receive orders from over the range for finer specimens of Minorcas, Buffs, Brown Leghorns and Light Brahmas. Atmospheric conditions and climatic qualities here are productive of intensity of color in these breeds. This is being conceded by the knowing ones on the other coast. Hence their orders.

Houdans and Polish are not as numerous as they should be here. The Golden Hamburgs and Polish do remarkably well under this coast's conditions, as do Cornish Games.

One other thing: The Eastern seller must make some concessions as to price when shipping fowls 3000 miles, for the reason that express charges added to the first cost make a pretty heavy bill.

THE GRAND TURK.—There are localities in Oregon and California that are well adapted to turkey culture, being timbered and watered. Outside of such nature homes for the birds, the turkey does not tolerably well. Indeed, I am of the opinion that turkeys are out of their little orbit when out of the timber. When we have timber and have turkeys, there is Thanksgiving goods in plenty. Mr. Hart, Clements, Cal., annually imports from two to three dozen head of new blood. He is the heaviest breeder of turkeys on the coast. Oregon is better adapted to turkey farming than any of the coast country, although the northern part of California is pretty nearly as heavily timbered as Oregon. Indeed, the wild turkey may be found in large flocks in upper California and also in Oregon and Washington. I have seen the wild, the Narragansett and their progreny, the Bronze, on exhibition side by side at our Northern shows. Two years ago in Oregon I saw a Bronze gobbler that weighed 49½ pounds—too big for breeding, but about the thing for a barbecue.

PASSING OF THE BELGIANS.—The Belgian hare scare has subsided. It is true many rabbitries are still standing above the wreck; but the amount of debris which the inundation left scattered here and there in heaps and windrows is pitiful to behold. The "Lords," "Dukes," "Ladies," "Counts" and "Earls" have gone on a crusade, not knowing when they shall return to their castles and preserves, and perhaps never.

Profitable Times and Seasons.

A writer for the Corning New Era gives some suggestions of wide interest. He says that an examination of the market reports in two of the San Francisco papers, extending over a poriod of ten years, gave him some years ago a definite idea of the market in eggs and poultry.

The first of August choice eggs (white and about eight to the pound) were quoted at 25 cents. From this date they advanced in November to about 40 cents and then began to decline. February 1st they were again quoted at 25 cents. Then followed an further decline to May 1st, when they were down to 12½ cents.

The inference is that if one wants to obtain the highest market for eggs hens must lay from August to February. That is easily said, but hens are like men—not a little perverse. If one has an incubator he can hatch the chicks when he chooses, and observation and experience have been that October chicks, if kept dry and warm and well fed, will bring best results. The trouble is that spring-hatched pullets begin to moult about the time one wants them to lay. If they are hatched in the fall the moulting season will be likely to be over by the next August. After the moulting and the hens begin to lay the first dozen eggs should be discarded and the balance hatched.

A good yard of Barred Rocks and a top cross of Black Minorca ought to bring good results. Select the best layers and keep them apart from the rest. No sensible man replenishes his stock of horses or cattle from mustangs. He breeds to his best, so if one wants choice fowl he will not breed in and with anything he has, but buy a first-class cockerel for the hens that are good layers of large, whiteish eggs. Five dollars is not too much to pay for a choice bird. But there may be a good market for eggs without sending to San Francisco, in which case the color will make but little difference.

Then, winter-raised cockerels will be in good condition for spring broilers, which bring the best prices about March. The summer resorts north of Redding — Castle Crag, Redding Retreat and Soda Springs—afford a good market for roosters and old hens from June to September. One should not keep hens more than two seasons. Feed them well, force to lay and sell them quickly. "A hen is a hen." Yes, but some are not worth the raising. Cull your yards, get rid of your scrub stock, buy a No. 1 thoroughbred cockerel, and you will stand a chance of making something worth the while.

Watch the market and meet it as best you can. But do not think you can make the business pay by simply buying a few hens, throwing some wheat on the ground and gathering the eggs. No business requires more patience, good sense and steady attention.

IN a tank 4×4 inches at the bottom, 12×12 inches at the top, 10 feet high, the water stands 7 feet and six-tenths of an inch deep when tank is half full.

Agricultural Review.

ALAMEDA.

IRRIGATING ORCHARDS. — Niles Herald, Feb. 1: J. C. Shinn has started a large centrifugal pump in the Mortimer orchard and is pumping a steady stream of 30,000 gallons of water per hour every day this week. Later the water will be turned into T. J. Sullivan's orchard. Mrs. J. A. Bunting of Centerville has also been pumping this week. This is the first irrigating of the season in this vicinity, but there are half a dozen others ready to begin pumping, and in another week probably all will have water in their orchards, as this is the time of the year when water will do the fruit trees the most good.

BUTTE.

THE HEMP INDUSTRY.—Gridley Herald: A representative of the Herald paid a visit to the hemp farm near town and found Mr. Heany at work getting his machinery in order to commence breaking the hemp. He expects to start up immediately, and has enough on hand to keep the mill going for the next three or four months. Mr. Heany is also plowing preparatory to putting in another crop. He will put in the home place and also quite a tract of land on the east side of the river—about 300 acres in all.

COLUSA.

PNEUMONIA KILLING HOGS.—Colusa Sun, Jan. 30: Hundreds of hogs are dying every week up and down the river from the effects of pneumonia. Many farmers have been doctoring for hog cholera, but from Dr. Bannerman, one of our best veterinary surgeons, we learn that the real cause of the great loss is pneumonia, brought on by the hogs not being properly housed. The doctor says that too many of our farmers think that all that is needed for hogs is plenty to eat and a mudhole to wallow in, but during the winter, especially when we have so much damp, foggy weather, hogs, as well as all stock running out, should have proper shelter. It will be noticed that very few hogs have died where proper shelter has been provided. J. W. Browning of Grand Island is probably the heaviest loser, having already lost about 400 head. Many cattle in the county have also died recently of the dreaded disease, black leg. Seven or eight head on the late C. P. Wilson place have died. S. H. Hines, Mr. Kilgore and Dave George have also lost stock by this dreadful disease.

VERY FEW HOGS LEFT.—Colusa Herald: George E. Showler recently shipped four carloads of hogs from this station to San Francisco. This will probably be the last shipment of hogs from this point for some time, as the country is pretty well drained of porkers. This last bunch came from the four points of the compass, though principally from up and down the river. On many ranches there is not even a squeal left.

CONTRA COSTA.

ALMOND GROWERS ORGANIZE.—Walnut Creek, Jan. 30: The almond growers of central Contra Costa county met here and organized for the purpose of obtaining better prices and selling the product as a whole to the highest bidder. E. I. Hutchinsan was elected president and Frank Gavin secretary.

FRESNO.

THE PHYLLOXERA.—Fresno Republican, Jan. 31: S. F. Booth and Wm. Glass, appointed as a committee by the Fresno Chamber of Commerce to prepare a statement regarding phylloxera in that section, submitted the following: "The poor condition of some isolated vines in a few of the vineyards near Fresno having been called to the attention of some of the members of the executive committee of the Chamber of Commerce, had the effect of that body's inducing Prof. Biolotti of the Agricultural Department of the University and Mr. Pierce, special agent of the Division of Pathology of the Department of Agriculture at Washington, D. C., located at Santa Ana, to come here to investigate the causes of the poor growth of the vines in question. These gentlemen gave it as their opinion that phylloxera had made its appearance in our vineyards, but to what extent it was very difficult to ascertain on account of the vines at present having no leaves; but from the fact of its not having been noticed at the time of bearing, it must be limited. But it was deemed very essential that measures be taken to prevent the spread of the disease."

GOOD PROSPECTS AT HURON.—Hanford Sentinel: A correspondent writing from Huron says: "Crop prospects have not been better in five years in the vicinity of Huron. Some 8000 acres have been seeded to wheat and barley, of which about 4000 acres have been flooded twice. There are from 200,000 to 250,000 sheep on the plains and all are doing well. Feed is very good; lambing is going on, and the estimate is that it will be from 115% to 150% for lambs. Plenty of butchers are traveling over the plains, buying sheep. Sheep men are not anxious to sell, but those who do sell get good prices.

NAPA.

RESISTANT VINE CUTTINGS IN DEMAND.—St. Helena Star, Feb. 1: Bismarck Bruck, superintendent of the Moffit place, has had a force of men at work for a long time making Rupestris St. George cuttings, and many orders have been filled from those desiring to plant new or to reinstate old vineyards. Mr. Bruck says he has made 300,000 cuttings of the Rupostris St. George variety this year and has sold all but 40,000, which were reserved for use on the place. Most of the 260,000 cuttings sold have gone to Santa Clara and Sonoma counties, large shipments having been made to Healdsburg. Twenty acres of new vineyard will be planted on the Moffit place this season, it having been decided to plant that much annually until the entire place is in resistant vines.

PLACER.

A NEW SOCIETY AMONG THE FRUIT GROWERS. — Newcastle News, Jan. 30: Last Saturday afternoon about fifty of the growers of Newcastle and vicinity met for the purpose of organizing a Horticultural Society and also to discuss the matter of forming some kind of an organization for the purpose of marketing canning cling peaches. Chas. H. Kellogg was chairman of the meeting and John B. Adams acted as secretary. Upon motion of J. M. Francis a committee of three was appointed to select temporary officers for a Horticultural Society. Chairman Kellogg appointed J. M. Francis, J. F. Madden and Geo. L. Threlkel as the committee. They reported back, selecting the same officers that were serving. The Horticultural Society organized, and a committee consisting of Robert Sherman, Mrs. Robert Sherman, Charles Carlson and W. R. Fountain, were appointed to draft by-laws for the society.

SAN JOAQUIN.

ALMOND BLOSSOMS.—Stockton Mail, Feb. 2: The heavy frosts have been welcomed by fruit growers because they retard budding, and thus lessen the danger of the newly opened buds being caught by the later frosts; but a sprig sent in from the Delphi winery, on the Linden road, shows that some of the almond trees have begun to bloom in spite of the cold weather. The blossoms on the twig referred to are well along and some of them are open.

SAN LUIS OBISPO.

ANNUAL CREAMERY MEETING.—Arroyo Grande Herald, Feb. 2: The annual meeting of the Arroyo Grande Creamery Association was held last Saturday and the old officers were re-elected as follows: A. B. Hasbrouck, president; T. Steele, A. Jatta, N. M. Wittenberg and J. T. Richards, trustees, and Arthur Jatta, secretary. It was decided to start up the creamery as soon as the separator, which is in San Francisco being repaired, has been received, which will probably be within a week or two.

SANTA CRUZ.

FRUIT NOTES. — Watsonville Pajaronian, Jan. 31: There were eleven cars of apples shipped East from this point during the past two weeks. The total shipment for the season is 580 cars.——These are busy days in that part of Amesti school district which is being converted into berry fields. Extensive plantings of berries are being made by R. Pinto, E. C. Bronson and Jas. Hopkins, Jr.——Orchardists in this district who have prune trees are not encouraged by the past season's results to keep on growing prunes. The fruit growers' prune combination has not been a success, and it is feared that at large trade centers the people have dropped the habit of using prunes as a dessert dish. The slack call for prunes and the immense stock on hand in California warehouses shows that the prune has had a setback.

SONOMA.

DON'T LIKE ROBINS. — Santa Rosa Press-Democrat: A Glen Ellen correspondent suggests that instead of there being a law against the killing of robins, the olive growers should have a law protecting themselves against the inroads of this species of the feathered tribe. It is stated that the robins have destroyed more than half of the olive crop and that the orchardists are powerless to protect themselves. The correspondent avers that there are "millions of robins" and that they devour hundreds of olives in the space of time marked by the dial of twenty-four hours.

ROSEDALE STOCK FARM MAKES A PURCHASE.—Santa Rosa Press-Democrat, Feb. 3: A notable addition to the Rosedale stud is the beautiful McKinney stallion recently purchased from Col. E. L. Mayberry of Los Angeles, and which arrived here yesterday in splendid shape in charge of Sam Norris of the Rosedale Stock Farm, who went south a few days ago to see that he reached his new home in safety. The animal is a superb specimen of the four-year-old and jet black. His action is said to be perfect and his size and shape leave nothing to be desired. He is by the great McKinney, 2:14¼, and his dam is Lady Washington by Whipple, so his blood is the blucst of the blue.

SUTTER.

FRUIT ALREADY CONTRACTED.—Sutter Independent, Feb. 1: It has been learned from a reliable source that fully two-thirds of the prune growers in this vicinity have entered into a five years' contract with the canneries whereby the growers are to be paid $22.50 per ton for pears, $22.50 for certain varieties of peaches, while for other varieties, such as the Tuscan and Phillips clings, the contract price ranges from $25 to $30 per ton. At first sight, these prices appear to be in favor of the growers; but when we consider that two years out of the five the crop will most likely be light, when prices for the growers ordinarily run high, often as much as $50 per ton for Tuscans, we conclude that the cannery people have the best end of the bargain.

THE SMYRNA FIG.—Sutter County Farmer: The successful cultivation and caprification of the Smyrna fig in this State has passed the experimental stage, and it has been proven beyond a doubt that this State can produce as good, if not a better, fig of this variety than the imported article. With these facts before them, fig growers in this county should make the most of their advantages and as soon as possible graft over a portion of their Adriatic fig trees to the Smyrna variety, or, if any new orchards are to be planted, that variety should be the one secured. We understand that some grafting to the Smyrna fig will be done in this vicinity this season.

TEHAMA.

GRAIN CROP LOOKS FINE.—Red Bluff News, Jan. 30: J. Casale, an extensive farmer of the Rawson country, has just finished sowing about 600 acres to wheat and barley. He says that his summer-fallowed stand looks exceedingly well, and that in all his farming experience he never saw a more promising condition of the grain crops at this time of the year than is noticeable this season.

TO TRY BEETS.—Red Bluff Cause: Thos. Simmons reports that about 1200 acres of the Finnell place is undergoing preparations to be planted to beets this year. The land is first plowed 10 inches deep. Then, after it thoroughly settles, it is again plowed and then leveled and smoothed with a disc harrow. The beet seed will be planted about the 1st of March. They will be put in by a drilling machine, in rows extending clear across the field.

TULARE.

COYOTES TROUBLESOME. — Visalia Times: John McCabe, who resides on a ranch lying between Goshen and Cross creek, says coyotes are so plentiful and noisy down his way that conversation one with another is impossible from the middle of the afternoon until late next morning, owing to the loud barking of the animals, and it is impossible to raise chickens or turkeys in that vicinity.

A SHEEP FREAK.—Visalia Times: M. Faure, a sheep owner of Delano, is said to be the possessor of a lamb that has six legs, two heads, one body and two tails.

VENTURA.

STOCKMEN ELATED.—Ventura Independent, Jan. 31: The excellent prospect which apparently stretches before agriculturists this season, induced by timely rains coming at short intervals, has inspired stockmen with such confidence that thousands of head of stock have been imported from Texas and Arizona. The extensive stock raisers of the Simi report a bright outlook. The hills and valleys of the country are clothed knee deep in verdure. Charles Donlon of the Donlon Bros., in company with Sheriff Charlebois, has just returned from a trip through southern Arizona and the State of Sonora, in Mexico, where they secured bargains in cattle. As a result of their venture they brought back 900 head of cattle, with 1000 contracted for and being rounded up for shipment here. Donlon returns in a few days to oversee his purchases and bring them in safety to the ranges of Ventura county.

YUBA.

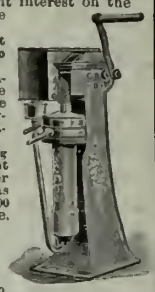
HOP ROOTS DYING.—Wheatland Four Corners, Feb. 2: Work in the hop yards will begin soon by trellis repairing. Much replanting will have to be done, as for some reason last season hops died out quite freely. The cause of roots dying is not understood, but it is supposed to be due to weather conditions, as reports from all hop sections of the coast show an increased number of dead hills.

SALE OF A FINE LOT OF BEEF CATTLE.—Marysville Democrat, Feb. 1: J. S. Haugh has purchased of G. Sieber 200 head of beef cattle for the Western Meat Co. of San Francisco. Mr. Sieber has been feeding these cattle during the past three months, and they are considered an extra fine lot of beef. The price is not stated; but, as the cattle are all very desirable weights, it is certain that Mr. Sieber received the top market price. Mr. Haugh is also shipping a number of calves to the same firm.

Sharples "Tubular" FARM Cream Separators

The Wonder of the New Century. Greatest step ever made in advanced Cream Separator construction.

Superior as the Sharples Separators have always been, these Tubular machines are far ahead and completely distance every competitor. They are worth double the money because guaranteed under usual conditions to produce enough more butter than the best competing separator to pay fully six per cent interest on the whole first cost of the machine.



We absolutely warrant it and give free trial to prove it.

Our factory is running double turn, one gang all day and one all night, for the dairyman who sees this machine buys it.

In addition to yielding more butter it is very light running. A 600 lbs per hour Tubular turns as easily as a previous 300 lbs per hour machine. No disks to bother with and get out of order, no complications. Washed in two minutes. Top of milk vat waist high.

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THE BEST

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Uniform in quality—not a stimulant, but a soil *food* One ton of this manure is equal to 12 or 15 tons of ordinary stable manure.

CHEAP, EASY TO HANDLE AND APPLY.

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.*

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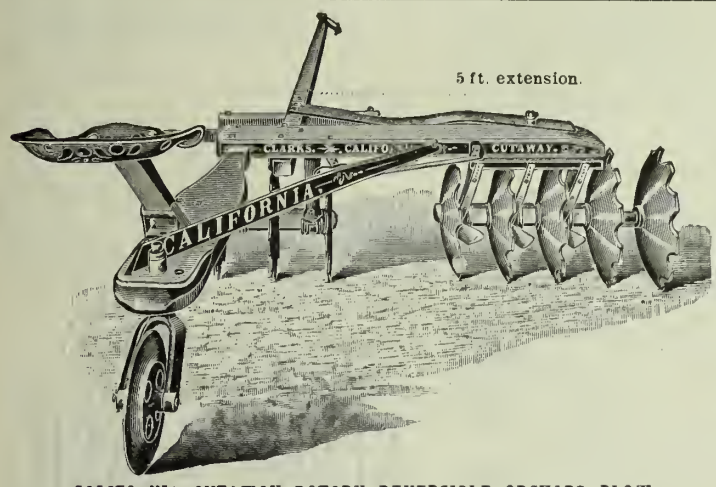

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Use up-to-date orchard tools and you will make MONEY growing fruit. Write for catalogue, testimonials and price.

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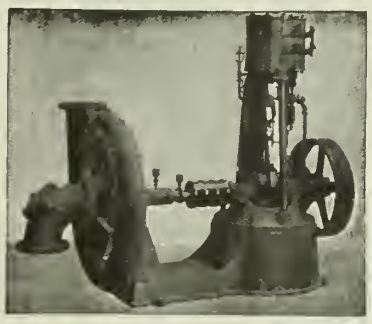

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We have no brands of fertilizers. Different crops and different soils require different fertilizers. The wonderful success of the sugar plantations in the Hawaiian Islands is largely due to the analysis of the soils and the close study of their requirements. For years we have analyzed soils and prescribed fertilizers. This method is the only rational and scientific one to follow. Be sure you know what you want and then get it, and use it. *Don't guess*, or use this or that brand of goods because your neighbor likes it.

We charge our customers nothing for the analysis of their soils. Send for directions for taking samples. Correspondence solicited.

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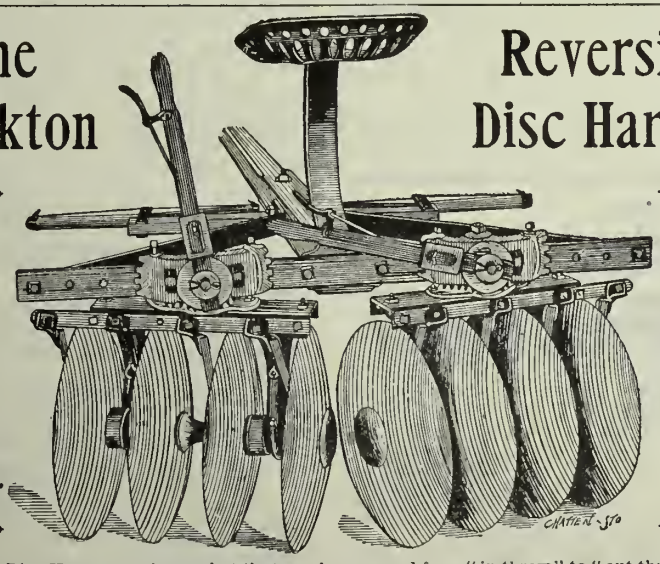
The Stockton Reversible Disc Harrow.



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Specially Adapted for Orchards and Vineyards.

The only Disc Harrow on the market that can be reversed from "in throw" to "out throw" It can be used with extension arms, which can be adjusted to leave a space of 4 to 6 feet between the gangs. By a succession of throws of the lever either section can be completely reversed from "in throw" to "out throw."

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EXPERT OPINION—Dr. Bernard Dyer (Consulting Chemist of Various British Agricultural Societies), writes:

"Nitrate of Soda is not a mere stimulant, as was erroneously supposed in earlier days. It is a true and very profitable plant food, and when it is properly used it neither exhausts nor injures the soil, but improves both its condition and its fertility."

For Sale by BALFOUR, GUTHRIE & CO., 316 California St., San Francisco.

Write to them for pamphlets on Nitrate of Soda as a Fertilizer.

Farming, Fertility, Fortune.

ECONOMIZE by keeping your land in FULL CULTIVATION, and obtain HEAVY YIELDS by using

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FINEST GRINDING AND ANALYSES GUARANTEED.

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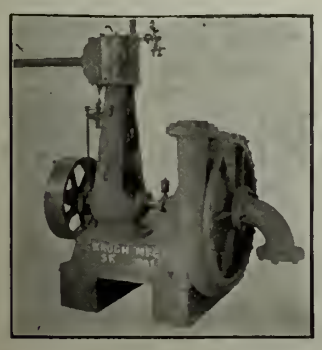

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W. S. VAN EMON, Selma, California.

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THE HOME CIRCLE.

The Elysian Fields.

Far out in yonder heavenly meadows blue
The drowsy day lets down the sunset bars,
And winding noiseless the bright gateway through,
Comes night with all her joyous flock of stars.

The bright-eyed Vesper enters at the head,
The grave-faced fathers of the flock stroll by;
The gentle ewes their tremulous nurslings lead
Along the wandering river of the sky.

And when her flock has safely wandered through,
Night closes soft the twilight shadowy gate,
And leaning on her crook, she smiles to view
Her browsing sheep, and is content to wait—

Until the sky a pearly luster shows,
And laughing day lets down the silvering bars;
Then, gladdened at the thought of sweet repose,
Night leads to fold her timorous flock of stars.

—Margaret Bartlett Cable.

Masterful John Masters.

The rice-planting aristocracy that dwelt in the quiet little Southern village of Moultrie contemptuously ignored the very existence of old Jeff Wiggins, although the Wiggins shanty was on the road that led from Moultrie to the more plebeian town of Great Swamp, that sprawled its frame stores, its lumber mill and its turpentine still along the railroad. If Moultrie spoke of old Jeff Wiggins at all, which is doubtful, it called him "that old cracker." Wiggins had come out from Great Swamp, however, and Great Swamp, knowing him intimately, spoke of him more freely and more accurately. They called him "that drunken hog." He was despised by even the guller negroes, with whom he fraternized in the fellowship of fiery corn whiskey. They refused to work his cotton land on shares, for which old Jeff cared little, because his wife and his daughter hoed and plowed and planted for him, with the help of an ox. To his bent and wrinkled wife he was only a part of the dreary existence that she lived through listlessly; but to his tall, grave-faced daughter he was a daily agony, something to be cared for, something to be fought for. Whatever old Jeff Wiggins was to Moultrie and Great Swamp, he was always the father of Sally Wiggins to Sally Wiggins. Even her hunger for happiness in her love for John Masters did not lessen this strange sense of protection over the old sot whom she should have loathed, in the natural order of things. It is not surprising that sturdy John Masters, conscious of his power in his own little world, should not have understood her. This morning, he had come to plead again, to plead in a way that was very like a command, as was John Masters' way.

Sally loved him as only a woman starved in love and sorely needing a strong man's help could love. She was proud of his growing power in their world of field and pine; for Masters was one of those young men of insignificant birth who were now rising into power in a new South, where their fathers could have hoped for only for the overseer's quarters. She knew her lover was strong and brave, and a leader in the eyes of Great Swamp, and she knew he loved her. And, too, she knew old Jeff Wiggins was a shiftless, lying, thieving sot. Perhaps it was the very realization that her father had lost everything beyond hope that her yearn over him, in spite of Masters' pleading this morning—a pleading that had a touch of anger in it. The young foreman of the great turpentine camp of "the Barrens" was standing in the doorway, his face more stern than loving; and her father, very drunk, was sprawling on the bench outside the cabin wall.

"Sally," began Masters again, "I've waited long and patient for you, longing to take you out of this sty. You know that well, Sally, don't you? You known I love you well, Sally, and it's time you knew whether you love me."

"Of course I love you, Jack," said the girl, much troubled.

"Then why do you keep putting me off, dear?" he said, more gently.

"It's because of father," she answered. She turned and looked out the doorway at the old man. He was unkempt of hair, and his straggly gray beard dripped tobacco juice as he lay sprawled out and snoring on the bench. She saw it all and realized it all, realized it more keenly because of its contrast with the erect strength of the young man who stood so close beside her and into whose strong arms she longed to creep, had it not been for the harshness that came into his face as his eyes followed hers. A little dry sob broke from her, and she shut her eyes wearily. "Father being what he is," she said, "no one will care for him if mother and I leave him."

"Well, what of that?" he answered, bluntly. "Let him work for once in his life. I wish something would come along and kill him and feed him to the buzzards. He has cursed this community too long. Worse than that, he has cursed your life. But I can make up for all that, Sally dear, if only you will take me instead of him. It's got to be a choice, but it ought not to be a hard choice. You know I'll take care of your mother, too."

"Mother would come gladly," said Sally, slowly. "But, Jack, father needs me, anyway. If I don't stand by him, no one else in all the world will so much as look at him, if he should lie dying by the road. Can't you wait a little longer, Jack?"

"I will not wait longer," he answered, roughly, his face growing a dusky red beneath the tan. "You choose now, Sally, once and for all. You choose that dirty hog there, sleeping off the whiskey he stole from some niggers in my camp, or you choose me as I stand here holding out my arms to you. You can pick your man right now, but count on losing the other one for good. You know me for a man of my word."

"Oh, Jack, Jack," she said wearily. Leaning against the wall, she covered her face with slender hands that trembled. A tender look came over the harshness of Masters' face as he stood and watched her. Once he started to come to her; but on second thought, he shook his head and waited doggedly. Just then the gray old cracker on the bench rolled to the ground. The snoring ended in a snort, and he began to curse in a mumbling way, finally sitting up and looking around.

"Sal!" he growled, at last. "You Sal! hya'r, gal! Stop that cursed huggin' of your turpentine lover long enough to fetch your ole man a goud o' water."

"Masters, his face flushed and swollen with sudden rage, sprung from the doorway and towered over the old man.

"I'll trample your dirty tongue down your throat for that, you sot," he roared.

"Oh, come now, Mr. Masters, I didn't mean nuthin' by that," whined old Jeff Wiggins, throwing his arms over his face. "Sal, Sal, don't let Jack stomp on me, Sal!"

Masters felt a little hand on his arm restraining him. "Go, Jack," he heard her whisper, and the girl turned from him to kneel protectingly before her whimpering father.

For fully a minute John Masters stood and raged silently, as blinding passion and wounded pride struggled against a longing to stoop and lift the girl in his arms. But the realization that she had turned from him to kneel to that which he hated bitterly came uppermost at last, and rage flared up in him again.

"So you have chosen," he blurted out, standing above her. "And so it shall be forever and forever."

He turned abruptly and walked from the house with long, stamping strides. The whining of old Jeff Wiggins went on continuously, but he had reached the turn of the road before he heard a sound from Sally. Then he heard her begin to sob with a perfect abandonment of grief, and he started to run, that he might the sooner get away from it all. That afternoon the Plant System express was flagged to take on a passenger at Great Swamp. It was John Masters leaving the neighborhood of the Wiggins shack forever and forever.

It was late the next spring when John Masters came back to Great Swamp with a tired heart. His face was grave and his chin was stubborn; but, too, there was a new gentleness in his expression. Brooding a year in a Florida turpentine camp had taught him to love with understanding. So he shrank from himself and drew closer to the woman he loved. He was still "masterful John Masters," and he came back to her because he wanted her for himself. But underneath this was the beginning of the better part of love, and, partly, he came back that he might serve her. Jumping from the train before it had well stopped, he walked rapidly through the town and out on to the Moultrie road toward the cabin of old Jeff Wiggins.

About a mile from the railroad he came to the burying ground of the parish. It was a neglected acre. When he had reached the graveyard, Masters' pace had slackened. An uneasiness was growing on him; what if Sally did not want him back? A vague sense of shame was increasing as he thought of the last time he had seen her. Yet this was a scene of which he had been rather proud for the masterful part he had played. "I gave her every chance," he argued to himself. "It's not my fault if she chose him." But the closer he drew to the scene of that last interview, the more uneasy he became. His eye chanced upon a broad, flat tomb in the shade of a live oak, and, entering the burying ground, he seated himself on the tomb as on a bench, and tried to reason out his own justification.

After he had seated himself, he heard the thud of shoveled earth and the voices of several negroes at work. Evidently they were digging a grave on the other side of the live oak and were grumbling over the difficulty they were finding in getting out the water-soaked clay at the bottom of the trench.

"You quit that cursing," Masters said, grimly, "or you'll be needing a grave yourself."

The negro glanced sheepishly up and pulled off his old hat. "Ah right, boss," he said grinning cheerfully, "I done forget whar I wus. Doan hit me, boss, 'cause dis yere grabe got to be ready fo' de carpse right away."

"Finish it, then, but keep your mouth shut," said Masters, and the negro dropped back to his work. Masters did not go back to his seat, but stood within the shadow of the oak, directing the grave digging.

By and by, half a dozen cracker women from Great Swamp strolled list-

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lessly into the burying ground and waited. They inspected the open grave soberly, and nodded to Masters with a look of fleeting surprise, but he spoke to none of them. For some unaccountable reason, he, too, waited, standing by the grave like a soldier on guard.

After a while, a wagon, drawn by an old ox, crept down the road from the direction of Moultrie. It was driven by a negro boy, who kept from whistling by a stern self repression, but who could not resist shouting happily at his ox. He was seated on the end of a long pine box that stretched behind him in the wagon. A shriveled woman, bent and wrinkled, walked feebly behind the wagon as it crawled down the dusty stretch of road. One trembling hand rested on its tailboard; her other hand was held by a tall girl whose face was thin and wan, but who carried herself very erect. Her face was the face of one who had walked long in the valley of a great shadow; but, too, her face was the face of one who was not afraid. There was no quivering in her pallid lips, and her eyes looked from dark hollows with a mournful serenity.

The wagon came slowly into the burying ground and stopped by the open grave. Then John Masters' heart swelled with sudden pain, as, from his concealment in the shadow of the oak, he gazed full into the face of the girl who stood supporting the old woman by the edge of that muddy hole. In the face of the girl he read clearly a history of the past year, and an anguish of remorse possessed him utterly. All his brutal self-confidence fell from him, and he stood helpless to defend himself as he bowed his head before her. Unconsciously he twisted his strong hands about each other till the joints cracked.

The negro in the grave climbed out with a last bucketful of yellow water. The three grave diggers went to the wagon, where the boy reluctantly arose from his seat on the box. Together they bore the box to the trench they had dug, grumbling to each other at not keeping step. The group of cracker women came closer to the edge, where the serene, white-faced girl stood by her mother.

The negroes tied a couple of dingy plow lines about the pine box, and let it down into the grave on a run, till it splashed into the yellow water, turning on its side. No word broke the silence, but a bobwhite began his clear, sweet call from the Rhett tomb. The negroes lazily picked up their shovels and attacked the heap of clay that was piled beside the grave, throwing in the earth with careless swings. It struck with muffled thuds on the box below.

At the sound of the earth pounding so roughly on the box, a look of pain came into the white serenity of the girl's face, and she turned in silent protest to the negroes. This look of appeal was almost a relief to Masters. It showed a chance to serve her at once, and he stepped quickly from the shadow.

"Mind what you're doing, you niggers!" he said sharply. "Fill that grave more carefully! Lower your shovels at first."

"A—all right, boss," said one, good naturedly. He turned from them to find the girl looking at him with wide open eyes and parted lips. Then, before the women, he came close to the girl and held out an appealing hand.

"Sally! Sally!" he said, very distinctly. "Can you forgive me, Sally? Cannot you love me again, Sally? Your father shall not stand between us, no matter what he is. Just let me help you."

"Hush Jack," she said, very, very gently. "It is father we are burying."

"Then I will serve you in that—and him," he said. He turned and stood by the negroes, directing them with a word or a gesture, till they had filled the grave. They slouched away, and the group of women went too, but Masters took a shovel, and heaped a mound above the grave, shaping it skilfully, while Sally watched him with misty eyes. Old Mrs. Wiggins had moved away to spell out inscriptions on the largest stones; it was, in reality, a holiday to her, and she was making the most of it in her listless way. But Masters cut an armful of jessamines when had finished shaping his mound, and brought them back to the grave. There in the mud he kneeled and arranged the blossoms to cover the nakedness of the fresh dirt as much as possible. All this while the girl watched him in silence, a tenderness growing in her face; for she understood what he meant even better than he himself understood it. When at last he had finished, he arose and stood by old Jeff Wiggins' gave, holding out his arms to her. She came to him immediately, but, somehow, he felt the difference. It was surrender, and yet it was reserve, too. It was John Masters' penance to know that his wife's love for him must always contain some of the same gentle pity she had felt for the weakness in old Jeff Wiggins.—Andrew Comstock McKenzie.

Olive Oil for Indigestion.

One has to consider how olive oil is used in the warm parts of Europe where the olive is cultivated, and how ghee is used in India, in order to satisfy oneself that oily matter may be taken with facility in hot countries as in cold. You hear nothing about indigestion in these lands; you find that a bad olive harvest or scant supply of ghee is a great national calamity. A Hindoo servant of a friend who kept up his Indian habits of eating in London has told me that in his own case nothing would make up a deficiency of ghee or butter, and that his experience in this matter was the common experience of his countrymen at home or away from home. Indeed, it may be taken for granted that oil may be used in large quantities throughout the year in the hot, olive growing countries of the south of Europe, not only without making the people bilious or out of order in any way, but with unmistakable benefit.

Dr. Cohnheim, at the International Medical Congress, detailed his experience with large doses of olive oil in cases of severe gastric distress. In his first case, the young man had suffered from an injury in the gastric region and it seemed probable that an ulcer had resulted. The pain on eating was so great as to make him avoid food. A wineglass of olive oil taken before meals gave complete relief. The same remedy was tried in other cases in which stomach discomfort was a prominent symptom. Even in cases of gastric cancer, relief was afforded to many symptoms. In cases of pylorus stenosis, most satisfactory results were secured, as far as the alleviation of symptoms was concerned. Cohnheim has treated twelve cases of gastric catarrh by this method with uniformly good results whenever the patients bore the oil well. Patients who had lost so much in weight as to appear almost cachectic began immediately to gain in weight, and within a couple of months gained from fifteen to thirty pounds.

Professor Mathieu, of Paris, said that in certain parts of the country both of Germany and France, olive oil is used as a family remedy for all stomach pains, and has a high reputation. In his pratice at the Hospital Annual Dr. Mathieu has often used this remedy and knows how efficient it is where less simple remedies have failed. He recommends it with confidence, despite the fact that it is a popular hygienic rather than a drug medicine.—Dr. M. L. Holbrook in Health Magazine.

The fact that fish are slippery is accounted for in this way: The slimy coating protects them from the attacks of fungus, a form of plant life found in all waters. If a fish is uncovered by slime the fungus lodges there and grows until in time it kills the fish. The slime helps also to increase the speed of the fish through the water.

Old Lady—And how did you come to join the Salvation Army, my good young man?

S. A. Recruit (frankly)—It was the only way I could get the public to stand my cornet playing, ma'am!—Puck

DOMESTIC ECONOMY.

Domestic Hints.

STEAMED SUET PUDDING.—One cup of molasses, one cup of sweet milk, one cup of seeded chopped raisins and three cups of flour. Stir into molasses one tablespoon of wine and one teaspoon of soda. Steam three hours and serve with liquid sauce.

PLUM PUDDING.—Six buttered crackers rolled fine and soaked in three pints of milk. Cream one-quarter of a cup of butter with one cup of sugar, add half a teaspoonful of salt, one teaspoonful of mixed spice and six well beaten eggs. Stir it all into the milk and add one pound of best raisins. Bake in a deep pudding dish well greased with cold butter. Bake very slowly in a moderate oven three hours. Stir several times during the first hour to keep the raisins from settling.

CELERY KNOBS.—Celery knobs, so highly esteemed by German cooks, are in market, and are worthy a place on the bill of fare. They are delicious boiled in salted water until tender, cut into dice and served in white sauce. For a salad boil the knobs whole. When they are cold cut them in two, remove a thin slice from the rounding edge of each and scoop the inside from each half, leaving a cup. Fill this with diced potatoes, beets and carrots that have been dredged with French dressing, stand them on a bed of lettuce or cress and place a teaspoonful of thick mayonnaise on the top of each.

CALVES' TONGUES, BRITTANY STYLE. Blanch a couple of nice tongues and lard them through with lardoons of bacon, well seasoned with pepper, salt and chopped herbs. Curl the tongues in a deep saucepan with slices of bacon, add a bay leaf or two, some parsley and thyme and an onion, and cover with good stock, having in it half a pint of sherry. Boil up once, then set the pan in the oven for five hours. When they are done remove the skin from the tongues and cut in slices, strain the gravy, remove the grease from it and thicken with a little flour, and arrange the slices on a dish and cover with the sauce.

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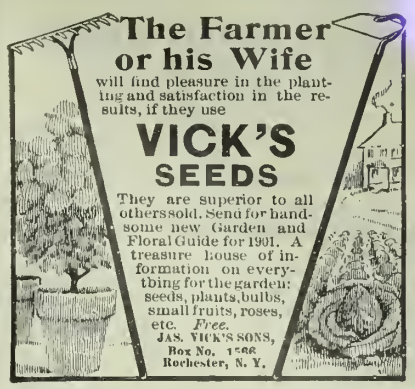

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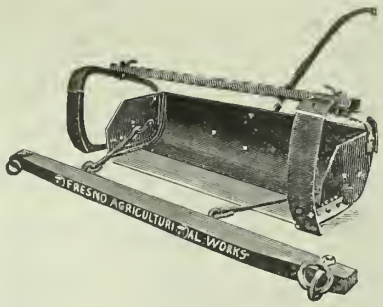

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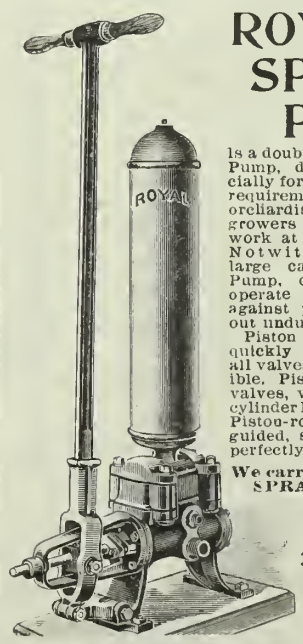

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 6, 1901.

NEW YORK WHEAT FUTURES.

Wheat futuros in Now York were as follows for tho week named, price heing por bushel:

	Feb.	May.
Wednesday	—@—	80⅜@80⅞
Thursday	—@—	80⅛@80¾
Friday	—@—	80 @80⅞
Saturday	*—@—	—@—
Monday	—@—	80⅛@79¾
Tuesday	—@—	80⅛@79½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	6s 1⅛d	6s 1⅜d
Thursday	6s 1⅛d	6s 1⅛d
Friday	6s 0¾d	6s 1⅛d
Saturday	*-s —d	-s —-d
Monday	6s 0⅛d	6s 0⅛d
Tuesday	6s 0¼d	6s 0⅝d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 03⅝@1 03¾	1 07½@——
Friday	1 03⅝@1 04	1 07½@——
Saturday	*——@——	——@——
Monday	1 03⅝@1 03⅝	1 07½@1 07¼
Tuesday	1 03¼@1 03⅛	1 07⅛@1 06⅞
Wednesday	1 02½@1 02¾	1 06½@1 06⅞

*Holiday.

WHEAT.

While there is not much wheat changing hands from producers in this center, there has heen a very fair outward movement lately. The exports of this cereal for January were decidedly heavier than for any previous month the current cereal year, or for any month during the harvest year of 1899-1900. Sixteen wheat cargoos were sent afloat from this port last month, the aggregate heing 51,500 tons, representing a valuation of $1,047,000. The next heaviest record was for December, when shipments footed up 40,000 tons. For January of preceeding year the wheat exports footed up only 31,600 tons, or little more than half the quantity sent outward the past month. That February will show a comparatively liberal export movement is altogether prohable. In addition to the increased shipmonts to Europe, South America is now taking considerable wheat from California, a part cargo of 5600 tons having been cleared for Callao the past week, and one or two ships are now loading for same destination. Prices have not improved, however, and prospects are not encouraging for the development of any pronounced firmness in tho near future. Neither is it likely that huyers will succeed in hammering values to materially lower levels. Prices are now too low, and any changes should he to stiffer rather than to easier figures. The visible supply of wheat in the United States east of the Rockies was reported at 59,767,000 hushels, showing a decrease for the woek of 1,024,000 hushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for tho week were as follows for the options named:

May, 1901, delivery, $1.04@1.02½.

December, 1901, delivery, $1.07½@1.06½.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.02½ @ 1.02⅞; December, 1901, $1.06½@ 1.06⅞.

California Milling	$1 00 @1 05
Cal. No. 1 shipping, alongside	97½@1 00
Oregon Valley	97½@1 00
Washington Blue Stem	1 00 @1 02½
Washington Club	97½@1 02½
Off qualities wheat	92½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s3d@6s3½d	6s3d@6s3½d
Freight rates	36¼@s37	37½@38¾s
Local market	$0 97½@1 00	$0 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on Jan. 1st and Feb. 1st:

Tons—	Feb. 1st.	Jan. 1st.
Wheat	*148,556	155,552
Barley	†51,479	50,271
Oats	4,077	4,465
Corn	697	760

*Including 100,302 tons at Port Costa, 47,600 tons at Stockton.

†Including 32,346, tons at Port Costa, 9303 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 6996 tons for tho month of January. A year ago thero were 204,413 tons wheat in Call Board warehouses.

FLOUR.

Market has ruled quiot the current week, with values quotably in same position as last noted. Supplies are fairly liberal, as compared with the immediate demand, and market is not firm, sales at full current rates being confined in the main to most favorite marks. The export trade at present, aside from shipments to South America, is comparatively light.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

No appreciable advances have heen estahlished in quotahle rates for this cereal since last review, although concessions in huyers' favor wero not numerous or pronounced, especially on most desirable qualities. There is a fair outward movement, both hy soa and rail, but offerings continue of liberal proportions, there heing few holders who care to carry stock into the coming season. Another part cargo was sent afloat the past week for Europe, the British ship Springbank, clearing for Liverpool with 1,125 tons, valued at $18,000. In the speculative market there was no active trading, nor were there any noteworthy fluctuations in Call Board values.

Feed, No. 1 to choice	75 @ 76¼
Feed, fair to good	70 @ 72½
Brewing, No. 1 to choice	80 @ 85
Chevalier, No. 1 to choice	97½@1 02½
Chevalier, No. 2	85 @ 90
Chevalier, poor	70 @ 75

OATS.

Market remains unfavorahle to huyers, with prospects of so continuing throughout the halance of the soason. Despite tolerahly liberal arrivals from the East lately of this cereal, spot stocks are lightor than a month ago. While market is firm throughout, strength is most pronounced on stocks especially dosirahle for soed or for millers' use.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 32½@1 40
White, poor to fair	1 20 @1 27½
Gray, common to choice	1 20 @1 37½
Milling	1 45 @1 50
Surprise, good to choice	1 45 @1 55
Black Russian	1 15 @1 35
Red	1 20 @1 45

CORN.

There aro only moderate quantities offering of either domestic or Eastern, and for good to choice of all varieties values are heing fairly well maintained at prevailing rates. Damp or othorwiso defective corn moves slowly, even at comparatively low figures.

Large White, good to choice	1 15 @1 17½
Large Yellow	1 15 @1 17½
Small Yellow	1 50 @——
Eastern, in bulk (carload lots)	1 08 @1 10

RYE.

Demand is slow and market lacks firmness. There is considerably more offering than can he accommodated with immediate custom.

Good to choice, new	85 @ 87½

BUCKWHEAT.

Stocks aro light, are mostly in strong hands and are bcing vory steadily held.

Good to choice	2 00 @2 10

BEANS.

The Government is again in the market for white heans. Bids are to he oponed to-morrow (Thursday) for ahout 30,000 pounds, and the chances are the Government will call for a greater quantity than above specified. The markot is strong for all white varioties of desirahle quality, with prospect of so continuing during the halance of the season. In colored beans there is a moderate business doing at rates quoted, valuos showing no approciable chango. Stocks of colored continue to he principally Pinks and Bayos.

Pea, fair to good, 100 lbs	—— @——
Small White, good to choice	4 75 @4 90
Lady Washington	4 10 @4 25
Butter	4 25 @4 50
Pinks	2 15 @2 30
Bayos, good to choice	2 65 @2 75
Reds	3 00 @3 25
Red Kidney	4 00 @4 25
Limas, good to choice	5 65 @5 75
Black-eye Beans	2 75 @3 00
Horse Beans	1 75 @2 00
Garhanzos, large	2 00 @2 25
Garhanzos, small	1 25 @1 75

DRIED PEAS.

Choice Green are salahle to fair advantage, under moderate inquiry and quite limited stocks. Niles Peas are recoiving little or no attention at this date.

Green Peas, California	2 60 @2 75
Niles Peas	1 85 @2 00

WOOL.

Dullness continues to prevail in the local market, and there are no evidences of any special activity in Eastern manufacturing centers. Quotahle valuos remain nominally as heforo, hut on forced sales these figures could not be realized. The future is poorly defined, hut according to the views of some who are vory close to the trade, it looks as though leading huyers were holding off, not wishing to excite the market in the least, owing to nearness of new clip, which promises to be quite desirahlo, and the hest of which they are planning to secure at most favorable terms possible.

SPRING.

Humboldt and Mendocino	16 @17
Northern, free	14 @15
Northern, defective	12 @13
Middle Counties, free	14 @15
Middle Counties, defective	11 @13
Southern, 12 mos	8 @10
Southern, free, 7 mos	9 @11
Southern, defective, 7 mos	8 @ 9
Oregon Valley, fine	17 @18
Oregon Valley, coarse to medium	16 @17
Eastern Oregon, choice	13 @15
Eastern Oregon, fair to good	10 @12
Nevada, as to condition	11 @15

FALL.

Humboldt and Mendocino	11 @13
Middle County	9 @10
San Joaquin	7 @ 9
San Joaquin Lambs	8 @ 9

HOPS.

Aside from a moderate movement outward from stocks in second hands, these hops going mainly to Australia, there is nothing of consequonce to report in the hop trade. There is little or no inquiry for hops from first hands, with few now offering, and those mainly under choice. Wholesale valuos are in consoquence very fairly defined.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

The hay market has heen weak for all descriptions, and especially for other than most select qualities. Receipts were liberal and the demand slow. Wet woather during a portion of the time intorfered seriously with trade. The prospect for improvement very soon in tone or in prices are not encouraging.

Wheat	8 00@12 50
Wheat and Oat	8 00@11 50
Oat	7 00@11 50
Barley	6 00@ 9 50
Volunteer	5 00@ 7 00
Alfalfa	8 00@ 9 50
Stock	5 00@ 7 00
Compressed	8 00@13 00
Straw, ℔ hale	40@ 47½

MILLSTUFFS.

Owing to increased spot supplies of Bran, principally from Orogon, the market presented an easier tone, hut there were no pronounced declines in quotahle rates. Middlings and Shorts ruled quiet but fairly steady. Rolled Barley and Milled Corn were held at much the same figures as precoding week.

Bran, ℔ ton	15 00@15 50
Middlings	17 00@19 00
Shorts, Oregon	15 00@16 00
Barley, Rolled	16 50@17 00
Cornmeal	25 50@ ——
Cracked Corn	26 50@ ——

SEEDS.

Alfalfa seed is still offoring in moderate quantities, mostly from Utah, with prices quotahly unchanged, hut the present inquiry is slow, the season's demand having been nearly satisfied. Businoss in Bird seed is of light volume and at generally unchanged valucs.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The usual mid-winter dullness continues to prevail in the hag market. Values for Grain Bags are ruling decidedly steady, both in Calcutta and in this conter. Thore is no inquiry from the interior worth mentioning, neither are importers or handlers of local product making special effort to do business at present.

Calcutta Grain Bags, buyer June-July	6¼@ 6¾
Calcutta Grain Bags, spot	6 @ 6⅛
San Francisco Grain Bags, 22x36, spot	6 @—
State Prison Bags in lots of 2000, ℔ 100	—@—
Wool Sacks, 4 lbs	—@32½
Wool Sacks, 3½ lbs	—@28½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4¾@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

Values for Hides and Pelts have remained quotahly in same position as preceding week, hut market was not noteworthy for firmness. There was no lack of demand for desirahlo qualities of Tallow, and full current figures were as a rule roadily obtained.

Only select hides, clean and trimmed, can be relied on to hring full figures. Culls of all kinds, either from gruhs, cuts, hair slips, side hrands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	9
Medium Steers, 48 to 56 lbs	9	8
Light Steers, under 48 lbs	8	7
Heavy Cow Hides, over 50 lbs	8½	7½
Light Cow Hides, under 50 lbs	8	7
Wet Salted Kip	9	8
Wet Salted Veal	9	8
Wet Salted Calf	10	9
Dry Hides	15½	13½
Dry Kip and Veal, 11 to 16 lbs	15	12
Dry Calf, under 4 lbs	16 @	14
Salted Horse Hides, large	2 50 @	—
Salted Horse Hides medium	2 00 @	—
Salted Horse Hides, small	1 00 @	—
Dry Horse Hides, large	1 75 @	—
Dry Horse Hides, small	1 00 @1	50
Dry Colts' Hides	50 @	—
Pelts, long wool, ℔ skin	75 @1	00
Pelts, medium, ℔ skin	60 @	75
Pelts, short wool, ℔ skin	30 @	50
Pelts, shearling, ℔ skin	10 @	25
Deer Skins, best summer	35 @	—
Deer Skins, good medium	— @	30
Deer Skins, thin winter	— @	10
Elk Hides	10 @	12
Tallow, good quality	4 @	4¼
Tallow, No. 2	3½@	3¾
Goat Skins, perfect	30 @	37½
Goat Skins, damaged	10 @	20
Kid Skins	5 @	10

HONEY.

Considering the light output of honey last spring, from California apiaries, present offerings are of tolerahly liberal volume and are mostly of amher grades. The market is slow at the quotations. It is reported on good authority that adulterated and imitation honey is being dealt out in considerable quantity, which accounts in a great measure for the very limited husiness doing in the puro article.

Extracted, White Liquid	7½@ 8
Extracted, Light Amber	6¾@ 7¼
Extracted, Amber	5½@ 6½
White Comb, 1 lb frames	13 @14
Amber Comb	11½@12½
Dark Comb	8 @ 9

BEESWAX.

Market is lightly stocked and unfavorahle to huyers. More than is offering could be readily accommodated with custom at prevailing figures.

Good to choice, light, ℔ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Beef is only in moderato supply, hut demand is not very hrisk at full current rates. Mutton is commanding fully as stiff figures as have heen current for several weeks past. Lamb continues in light receipt and high. Pricos for Veal aro without appreciable change. Hogs aro not arriving in large quantity from any quartor and are bringing good figures.

Beef, first quality, dressed, net ℔ lb	7¾@ 8
Beef, second quality	7½@—
Beef, third quality	6½@ 7
Mutton—ewes, 9@9½c; wethers	10 @10½
Hogs, hard grain fed, medium	6 @ 6½
Hogs, small, fat	6 @ 6½
Hogs, large. hard	5¾@ 5¾
Hogs, feeders	5¼@ 5½
Hogs, country dressed	7½@ 8
Veal, small, ℔ lb	6 @ 9
Veal, large, ℔ lb	7 @ 8½
Lamb, yearlings, ℔ lb	10 @11
Lamb, spring, ℔ lb	12½@15

POULTRY.

Choice young stock was in light receipt and hrought tolerahly stiff figures, hut for other doscriptions the markot was unfavorahle to sollers, from same cause previously noted, viz.: heavy arrivals of Eastern. Full-grown Eastern chickens wore offered at relatively lower prices than fair avorage domestic, difference in size and weight considered.

Turkeys. live hens, ℔ lb	11 @ 12
Turkeys, live gobblers, ℔ lb	10 @ 11
Turkeys, Dressed, per lb	13 @ 16
Hens, California, ℔ dozen	3 50 @4 50
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	5 00 @6 00
Fryers	5 00 @5 50
Broilers, large	5 00 @5 50
Broilers, small	3 00 @4 00
Ducks, old, ℔ dozen	4 00 @4 50
Ducks, young, ℔ dozen	6 00 @7 50
Geese, ℔ pair	1 50 @2 00
Goslings, ℔ pair	2 50 @3 00
Pigeons, old, ℔ dozen	1 00 @1 25
Pigeons, young	2 50 @2 75

BUTTER.

Demand was vory fair for best qualities of fresh, with no excessive arrivals of this description, and values averaged a little higher than preceding week. Defective qualities continued to be offered at slow and irregular prices, with little positive inquiry for this sort.

Creamery, extras, ℔ lb	21 @—
Creamery, firsts	19 @—
Creamery, seconds	18 @—
Dairy, select	19 @—
Dairy, firsts	15 @17
Dairy, seconds	14 @—
Dairy, soft and weedy	— @—
Mixed store	10 @11
Creamery in tubs	17 @19
Pickled Roll	18 @19
Firkin, California, choice to select	17 @19
Firkin, common to fair	16 @17

CHEESE.

Market for domestic product is showing weakness, with some tendency to accumulation of stocks, not so much on account of heavy arrivals as of light demand. Buyers are operating from hand to mouth, looking for easier prices at an early date.

California, fancy flat, new	11 @—
California, good to choice	9½@10
California, fair to good	9 @ 9½
California Cheddar	— @—
California, "Young Americas"	10 @11½

EGGS.

Several cuts have been made in quotations the current week. Receipts were in excess of the immediate demand at full current rates. The tendency was to a narrow range of values, most of the eggs now showing good condition, and the inquiry being mainly for the lowest priced stock or store-gathered eggs.

California, select, large, white and fresh.	23 @—
California, select, irregular color & size.	22 @—
California, good to choice store	21 @22
Eastern, as to section and grading	— @—
Eastern, cold storage	— @—

VEGETABLES.

Arrivals of most kinds of vegetables were light, especially fresh or early Spring, and choice qualities of latter sold at generally firm figures. Onions were in fair supply but at extreme rates asked not many were required to satisfy the demand. Asparagus is beginning to arrive regularly, and will soon be in sufficient quantity to admit of the filling of shipping orders of moderate size.

Asparagus, ℔ lb	30 @ 40
Beans, String, ℔ lb	10 @ 12½
Cabbage, choice garden, ℔ 100 lbs	1 00 @1 25
Cauliflower, ℔ dozen	50 @ —
Egg Plant, ℔ lb	15 @ 17½
Garlic, ℔ lb	3½@ 4½
Onions, Yellow Danver, ℔ cental	1 75 @2 10
Peas, Sweet, garden, ℔ lb	5 @ 7
Peppers, Green Chile, ℔ lb	15 @ 20
Squash Summer, ℔ box	1 50 @2 00
Squash and Pumpkin, ℔ ton	12 50 @17 50
Tomatoes, ℔ crate	75 @1 50

POTATOES.

Stocks of potatoes were heavy of the ordinary run of offerings of Burbank Seedlings, with no active demand for stock of this class, and the market for same devoid of firmness. Select Burbanks sold to fair advantage. A few varieties in request for seed, Oregon Peerless among the number, brought tolerably good figures. Sweets were in moderate receipt, with inquiry rather limited and market favorable to buyers.

Burbanks, River, ℔ cental	30 @ 60
Burbanks, Petaluma-Tomales, ℔ ctl.	35 @ 60
Burbanks, Salinas, ℔ cental	75 @1 10
Burbanks, Oregon, ℔ cental	55 @ 90
Garnet Chile, ℔ cental	65 @ 80
Peerless, ℔ cental	65 @1 00
Sweet Potatoes, Yellow, ℔ cental	75 @1 10

The Fruit Market.

FRESH FRUITS.

Apple market has been quiet during the week under review, with present stocks of small volume, and offerings mainly under choice. Some apples which had been in fine condition and were desirable as to variety and size, are now showing more or less effects from decay, and on this account meet with slow sale at low figures. For fine table apples the market was very firm, some extra select commanding above quotable rates, but with this exception, the tendency of prices was in favor of buyers.

Apples, fancy, 4-tier box	1 50 @ 2 00
Apples, good to choice, ℔ 50-lb box.	75 @ 1 00
Apples, common to fair, ℔ 50-lb box.	35 @ 65

DRIED FRUITS.

Inactivity continues to reign in the market for cured and evaporated fruits, the reports of handlers being virtually a repetition of several weeks past. A few jobbers are doing a little business in assorted lots to the Territories and to small outside points in the middle West, but the trade is light in the aggregate and is not of sufficient volume to cause distributors to make any effort to replenish or increase their holdings by purchasing from first hands. There are probably more Peaches moving than any other variety of fruit, and values for same appear fairly steady at the reduced quotations recently established. Apricots are quotably lower, holders making reductions in asking rates, with a view to effect a more rapid movement. Market for low-grade Apricots is especially unfavorable to sellers, there being some offerings of common sun-dried for which our lowest quotation is not at present obtainable in a regular or wholesale way. In fact, quotations throughout the list are based mainly on the views of sellers, this being necessary for the time being in the absence of any competitive bidding or noteworthy purchasing in the wholesale market. Apples are much neglected, the late shading of prices on same proving no temptation to buyers. There are no particularly heavy stocks of Apples, or of most kinds of dried fruit, but they appear large, owing to the sluggish state of trade. Orders would not have to roll in very rapidly to cause the market to speedily show decided improvement in tone. But with next to nothing doing, no matter how small supplies are, they prove too large for a healthy market. Prunes show no quotable improvement. While there are some going outward, the amount is insignificant compared with the quantity offering.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½@ 6
Apricots, Royal, choice, in sacks, ℔ lb.	6½@ 7
Apricots, Royal, fancy	8 @ 9
Apricots, Moorpark	9½@11
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	3 @ 4
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	6 @ 6½
Peaches, unpeeled, choice	4½@ 5
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, halved, fancy.	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, White and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	4 @ 5
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	1½@ 2½
Figs, White	2½@ 3½
Peaches, unpeeled	3 @ 5

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

While there is no activity to record, there is a moderate movement reported, mainly in Pacifics and seeded raisins. Stocks of Pacifics are not large, are of comparatively high grade, and bid fair to soon clean up at prevailing figures. Seeded raisins are selling in bulk at 6@6½c, showing a decline from rates lately current on this description.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—
(Usual advance for fractions.)	
Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Orange market is heavily stocked with common qualities, but choice to fancy are in limited supply. Market is weak for ordinary and rather firm for high grade fruit. Auction sales of Navels were at a wide range of prices, $2 per box being a quotable extreme for fancy, while standards went as low as 65c. Lemons were offered at unchanged rates, with supplies ahead of requirements. Mexican Limes were held at an advance, with stock small and in few hands.

Oranges—Navel, ℔ box	75@2 00
Seedlings, ℔ box	50@1 00
Tangerines, ℔ half box	1 75@2 00
Grape Fruit, ℔ box	75@1 50
Lemons—California, select, ℔ box	2 00@—
California, good to choice	1 50@1 75
California, common to fair	75@1 25
Limes—Mexican, ℔ box	5 00@5 50
California, small box	50@1 00

NUTS.

Market throughout is exceedingly quiet, with no changes to note in quotable values. Spot stocks of both Almonds and Walnuts are light.

California Almonds, shelled	22 @25
California Almonds, paper shell, ℔ lb	12 @13
California Almonds, soft shell	9 @11
California Almonds, hard shell	6 @ 7
Walnuts, White, soft shell	7½@ 9½
Walnuts, White, California, standard	7 @ 9
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

Market is quiet but firm, with little wine offering from first hands, either new or old. Dry wine of last year's vintage remains quotable at 16@19c. per gallon, with very little obtainable at the lower figure, even ordinary quality, and the most desirable stock is held as a rule above the range of values quoted. Prospects are favorable for firmer rather than easier figures for both old and new wines before the season closes.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	129,772	3,937,632	3,539,711
Wheat, centals	225,991	4,353,787	2,904,895
Barley, centals	40,695	2,766,240	4,183,454
Oats, centals	18,370	491,056	593,768
Corn, centals	1,440	76,140	91,839
Rye, centals	1,210	101,282	88,075
Beans, sacks	4,705	498,459	312,497
Potatoes, sacks	48,638	1,078,301	830,854
Onions, sacks	1,929	137,416	126,549
Hay, tons	3,556	110,001	106,851
Wool, bales	220	22,643	35,636
Hops, bales	32	6,810	8,831

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	10,438	2,181,258	2,319,115
Wheat, centals	335,080	4,212,506	2,581,157
Barley, centals	51,662	1,648,115	3,276,045
Oats, centals	...	47,156	28,107
Corn, centals	...	2,269	11,847
Beans, sacks	56	9,804	19,187
Hay, bales	200	82,342	75,232
Wool, pounds	38,102	271,723	3,845,087
Hops, pounds	18,521	507,226	884,732
Honey, cases	...	1,642	3,253
Potatoes, packages	1,995	78,695	51,957

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING JAN. 22, 1901.

666,371.—ROTARY ENGINE—A. F. Baatz, Fairhaven, Wash.
666,372.—ALARM FOR GUNS—W. T. Baggett, S. F.
666,405.—ALARM FOR GUNS—W. T. Baggett, S. F.
666,456.—WAVE MOTOR—Banning & Carey, Los Angeles, Cal.
666,475.—CAR COUPLING—H. G. Dunston, Santa Monica, Cal.
666,615.—WEIGHING MACHINE—E. Hanak, S. F.
666,526.—LADDER—J. J. Howard, Grass Valley, Cal.
666,607.—PAINTING CANS—J. H. Hughlett, Blaine, Wash.
666,479.—SICKLE GUIDE—J. T. Lightner, Red Bluff, Cal.
666,435.—TABLE—D. F. Oliver, Oakland, Cal.
666,568.—SIGNATURE GATHERER—J. E. Smyth, Pasadena, Cal.
666,580.—HOSE NOZZLE—J. P. Van Sickle, Pasadena, Cal.
33,976.—DESIGN—E. L. Fissell, Davisville, Cal.

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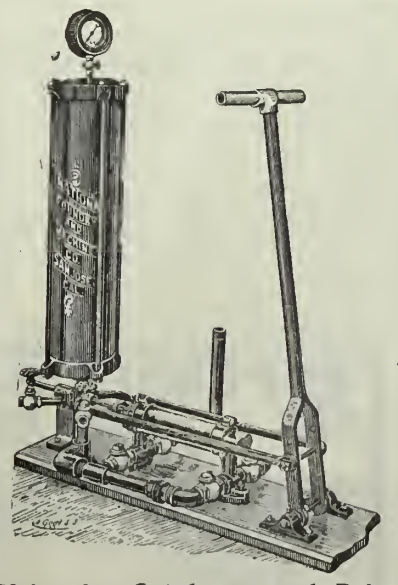

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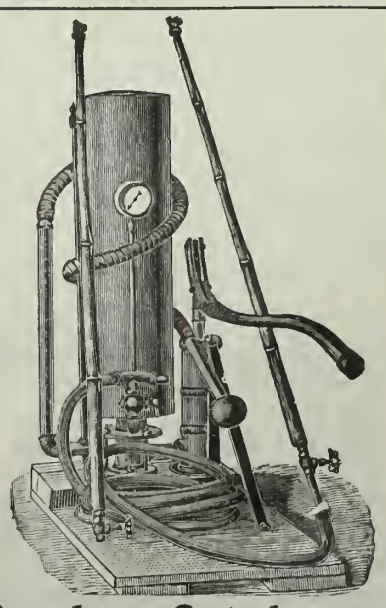

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THE DAIRY.

The Chance in Cheese.

J. W. Snowball of Woodland has been looking into the dairy situation as it seems to him and gives the Mail the results of his reflections. We reproduce them with the idea of inducing others to tell us how their foresight agrees with Mr. Snowball's.

WILL THE CREAMERY AND DAIRY BUSINESS CONTINUE TO PAY?—In looking over the annual report of the State Dairy Bureau to the Governor for the past year I find many things suggestive of the caption of this article, and from a careful survey of the situation in this county and throughout the State the conclusion is forced upon me that the dairy business, like many other businesses incident to California, is likely to be overdone, that is in the creamery line and in butter production.

BUTTER OR CHEESE.—The dairy report shows at the present time the production of creamery butter in California has very nearly reached the limit of consumption. In other words, we are now producing about all the butter we can consume in this State, and the report shows that there were over forty new creameries put in operation in this State last year, making now 283 creameries in full operation and twenty skimming stations or a total of 301, with a production of 16,486,696 pounds of butter and an increase of production over 1897 of 5,620,000 pounds in three years. This is a production of one-third more butter in three years, while at the same time the production of cheese has decreased from 6,399,625 pounds in 1897 to 4,989,960 pounds in 1890, or a falling off of 1,409,665 pounds. Yet this decrease in cheese production does not keep pace with the increase in butter output, showing the dairy business is on the increase in the State, that is the number of milk cows has largely increased, but the statistics do not show the actual number in cows, but they do show that the production of cheese is not anywhere near the consumption in the State; in fact it shows an importation of Eastern cheese of the value of over $2,000,000, therefore the lesson to be learned from these figures would certainly point to the wisdom of increasing our cheese production and letting up in the erection of new creameries, for if we continue at the rate of butter production in the last three years it must be clearly evident to the casual observer that in a few years more, and a very few at that, the butter production will exceed the consumption, and away will go the price, and the profit in butter making and in creameries, for in looking over the territory I can not see any outlet for our surplus butter. Oregon to the north of us is producing more butter and cheese than she can consume, and is actually sending cheese into the San Francisco markets now, and the Chinaman does not eat butter in his native land; in fact the Chinese as well as all the Mongolian and Malay races do not use butter neither do the Latin races of Mexico and Central America. A small amount could be exported to the Sandwich Islands and the few Anglo Saxons in the Orient might consume a little, and we can not send it East to compete with 10 and 15 cent butter in Chicago and New York.

It certainly looks to me to be the part of wisdom of the dairy men of Yolo county to look out for cheese factories and cheese makers, so that should the price of butter get below the cost of production, which it is quite liable to do, we would have another source of profit to fall back upon, to cheese making. But the great drawback at this time to cheese making is the scarcity of competent men to take charge of the business, for cheese making is in the nature of a science. Several of the Eastern States have established dairy schools where cheese making is taught, and also established experimental stations where the first product of cheese is produced, by experiment and improvement in methods until the New York and Eastern cheese is now exported to England in large quantities, where it compares favorably with the product of Holland and Switzerland and brings equal prices with the best in that market and we pay over $2,000,000 a year for this Eastern cheese in California, which sells for a better price right here than our own manufactured article; in fact first-class Eastern cheese sells in Woodland for 20 cents a pound and quite a demand for it at that price, while our California cheese sells from 12½ to 15 cents, and when you consider that average milk will make three pounds of cheese to one of butter, and butter to-day selling in San Francisco at 22 cents per pound and Eastern cheese at 15 and 16 cents, it certainly looks to a man up a tree that cheese making (if a No. 1 article can be manufactured) would be more profitable than butter making, especially when butter gets to 17 cents a pound, as it did last summer in San Francisco with a prospect of it going still lower in the near future.

I do not wish to be considered an alarmist, nor yet to predict a great fall in the price of butter, but to make an importat suggestion, for Yolo county is an alfalfa county, and when we get the waters of Cache creek utilized, as we will do one of these days when the old Silurians like myself are dead and gone and a new and enterprising people take our place, and the thousands of millions of gallons of water now going to waste filling up the great tule basin between Woodland and Sacramento, are diverted on to the vast tracts of land 20 miles long and 20 broad through Yolo county on both sides of the stream from the mouth of the canyon down, then the capabilities of old Yolo county will begin to develop and it will then support a population of a million of people, and be the richest 20-mile square of land on the face of the earth, with alfalfa fields, orchards and vineyards over every acre of it, and 80 cent wheat will be a thing of the past, and our farmers will be the richest and most prosperous in this great land.

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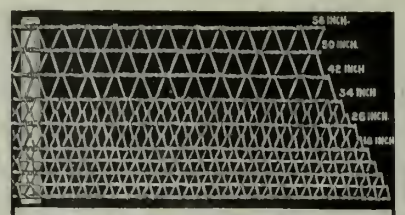

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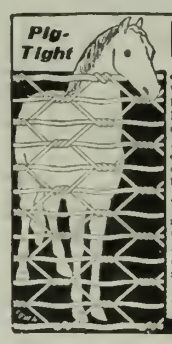

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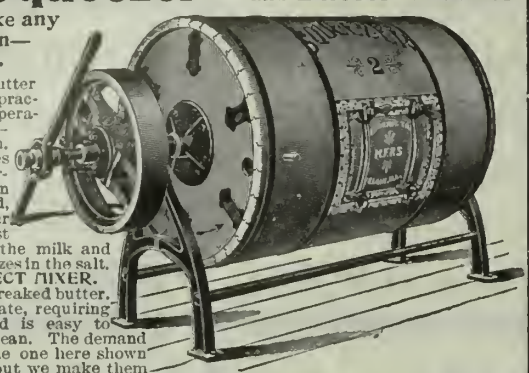

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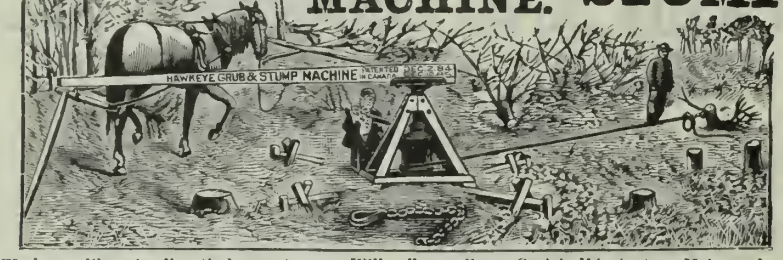

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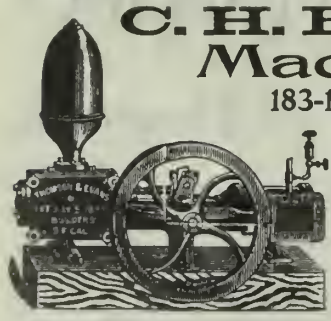

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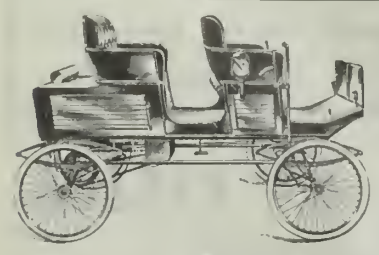

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The Grange and the Legislature.

To the Editor:—The following resolutions were presented by the writer to-day in Napa Grange and unanimously adopted, and through your valuable paper I desire to bring these matters before the different subordinate Granges in the State, in order that they may discuss the same and take such action as they in their judgment deem best. As the legislative session is half over, if any action is taken it should be prompt, and copies of the resolutions immediately forwarded to the Senators and Assemblymen representing the particular Grange in the Legislature. I would especially urge the subordinate Granges throughout the State to take prompt and favorable action with regard to the bills appropriating $100,000 in aid of the State Agricultural Society. The title to the State Fair grounds rests in the Agricultural Society, and these grounds are said to be worth $100,000. The bills—Johnson's in the Assembly and Devlin's in the Senate—provide that the society deed these grounds to the State, and that the State in consideration thereof shall appropriate $100,000 for the use of the society, to be applied, first, to the payment of its debts, and, second, to be expended by the Society upon the State's own property in increasing its value, "in fitting said property for use as a fair ground for the purpose of holding a State Fair, in the construction of barns, pens and stalls for stock to be shown at said fairs, in the construction of stands or buildings for the seating of visitors, show rings for the exhibition of animals, and a racecourse upon which to conduct trials of speed between horses, and generally in equipping and improving said grounds for holding agricultural fairs and exhibitions of domestic live stock."

Grangers, this is a matter in which you should all be interested; it is one of the few appropriations which is made directly for your benefit. This is a State institution that appeals directly to the farmers; other State institutions are liberally provided for. Will you not use your influence to help place the State Agricultural Society in a position where it may be able to give a State Fair that will be a credit to the Golden State?

J. S. Taylor,
Lecturer California State Grange.
Napa, Feb. 2.

RESOLUTIONS BY NAPA GRANGE.

We, the members of Napa Grange No. 307, Patrons of Husbandry, in regular meeting assembled, in the City of Napa, State of California, on this, the 19th day of January, A. D. 1901, do hereby ask our representatives in the Legislature of this State—Assemblyman Webber and Senator Corlett—to use their votes and influence to pass the bills presented by Senator Devlin and Assemblyman Johnson, providing for an appropriation of $100,000 to permit the carrying out of much needed improvements on the property of the State Agricultural Society at Sacramento; the bill presented by Senator Tyrrell of Nevada, requiring fire insurance companies to pay the face value of policies in cases of total loss; and the bill presented by Senator O'Neal, appropriating $5000 to be expended under the direction of the State Board of Horticulture for the scientific investigation of insects injurious and beneficial to fruit culture.

We would also ask them to use their influence to abolish all useless commissions and unnecessary offices, and we heartily endorse the economic recommendations of Governor Gage in his message to the present Legislature, in which he says: "In the heat of legislative business agreements have been made with fellow legislators, having other measures to be passed, by which votes have been exchanged, and thereby excessive appropriations have passed both houses. On account of this system of bartering in votes, and the facility with which large appropriations have been obtained, the officers of these public institutions have become reckless and prodigal in the expenditure of public money. I again advise against such legislative trading. While you are assembled, among other things, for the purpose of legislating and providing appropriations for the maintenance of the several institutions of the State, the people demand that the law-making power be exercised with circumspection and economy; hence, over-legislation is an evil in this regard as well as direct waste in the expenditure of the State's funds. The legislative power to appropriate and expend the public money is a most solemn trust. This power, when prudently exercised, gives vitality to the State; but when that power is so used as to result in extravagance and waste, thereby burdening the people with unnecessarily high taxes, such misuse of the power is the worst form of tyranny."

Resolved, That a copy of this petition, duly signed by the Master of this Grange and countersigned by the Secretary thereof, be forwarded to Assemblyman E. L. Webber and Senator Robert Corlett at Sacramento, with the request that they read the same before their respective houses, and that they use their influence and votes in deciding legislation, as indicated herein.

At Stockton Grange.

To the Editor:—Stockton Grange No. 70, P. of H., met at 11 o'clock A. M. Saturday, Jan. 26th, for the purpose of installing officers. There being so many visitors present, it was thought best to

STATE OF OHIO, CITY OF TOLEDO, LUCAS COUNTY, } ss.

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.

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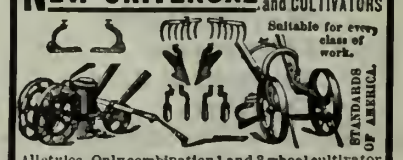

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hold an all-day open session. The morning hour was spent in conversation, and at the stroke of 12 we formed a line of march and proceeded to the banquet hall, where we regaled ourselves.

Toasts were called for and responses were made by Brothers Cornell of Sacramento, and Ferdun and Huffman of Lodi.

The Grange was called to order by Worthy Master Alling, who introduced Brother J. D. Cornell of American River Grange as installing officer. The officers for the year 1901 were then installed in a very impressive manner by the Deputy State Master, assisted by Sister Anita Leadbetter: Worthy Master, W. L. Overhiser; Overseer, J. B. Harelson; Lecturer, Sister Irene E. Leadbetter; Steward, Sister Mary H. Root; Asst. Steward, J. L. Beecher; Chaplain, Sister C. E. Overhiser; Treasurer, N. T. Root; Secretary, Nathan H. Root; Gate Keeper, Sister P. D. Rumrill; Ceres, Sister A. Ashley; Pomona, Sister Cora Beecher; Flora, Sister Burgie Harelson: Lady Asst. Steward, Sister Lizzie S. Root; Trustee for three years, Sister S. L. Root.

Our Worthy Lecturer, Sister I. E. Leadbetter, gave us the benefit of a short programme: Duet, Sisters P. C. Noyes and Burgie Harelson; recitation, Laura Root; piano solo, Sister Anita Leadbetter.

A general talk then followed, and at a late hour we dispersed to our various homes, all feeling more than ever pleased that we belong to that grand and noble Order, the Patrons of Husbandry. NATHAN H. ROOT, Sec'y.

Stockton, Jan. 29th.

Tulare Grange.

TO THE EDITOR:—Tulare Grange met at the hall on Saturday, the 2nd. The first and second degrees were conferred on a large class in an impressive manner. As many of those elected to receive the degrees in this Grange at the previous meeting were unavoidably absent, the Secretary was directed to notify them that the first and second degrees will be conferred at the next meeting, Feb. 16, at 1 P. M., and request them to be present. The third and fourth degrees will be conferred at the following meeting, the first Saturday in March.

The Lecturer, reading from the report of the National Grange, held in Washington, D. C., last November, read extracts from reports of State Masters on the condition of the Order of Patrons of Husbandry in their respective States. In California some new Granges were organized during the past year and old ones gained in membership.

In Colorado much interest in Grange work is manifested and an increase of 2% in membership gained.

In Illinois six new Granges were organized and eight old ones reorganized. Much attention is given to co-operation and Grange work is the paramount issue.

In Maine ten subordinate and two Pomona Granges have been organized, the year being one of great activity, with an increase in membership of 1900 and a total membership of 26,500.

New Hampshire has a membership of 24,000 and continually increasing.

In New York there are 900 Granges, seventeen of them being organized last year.

In Pennsylvania much Grange work is being done.

Rhode Island has chartered seven new Granges with over 100 membership in each.

In Vermont never before have the summer meetings been so well attended. Eleven new Granges were organized and an increase of 15% in membership gained.

In Washington there has been a large increase in membership, which has been brought about mainly by trade arrangements.

In West Virginia the Order is in better condition than it has been for thirteen years. There have been seven new Granges organized and much useful legislation secured by it.

In Wisconsin three new Granges were organized.

In Michigan ninety-three new Granges have been organized the past year and more following. Much attention is given to co-operative business, social and educational features, systematic lecture work and Grange literature.

In Ohio the membership in the past ten years has doubled, with a fair prospect of its reaching in the near future 100,000. Business co-operation and legislation are well looked after.

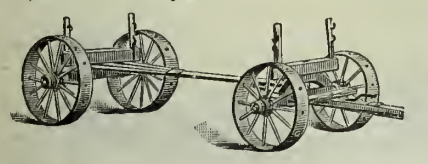
With a few more good, earnest workers like Bro. Winans in the field, California would soon rank with the best of Grange States. J. T.

Cannot Do Without It.

An old subscriber of the PACIFIC RURAL PRESS, who for some reason discontinued his subscription, now writes: "Enclosed find $2 for the PACIFIC RURAL PRESS. I used to take it, and miss it exceedingly—in fact, I cannot get along without it."

Farm Wagon only $21.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30-inch wheels with 4-inch tire, and sold for only $21.95.



This wagon is made of the best material throughout, and really costs but a trifle more than a set of new wheels, and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.

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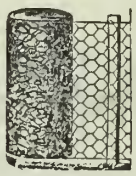

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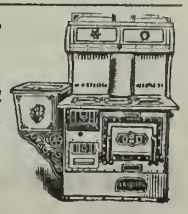

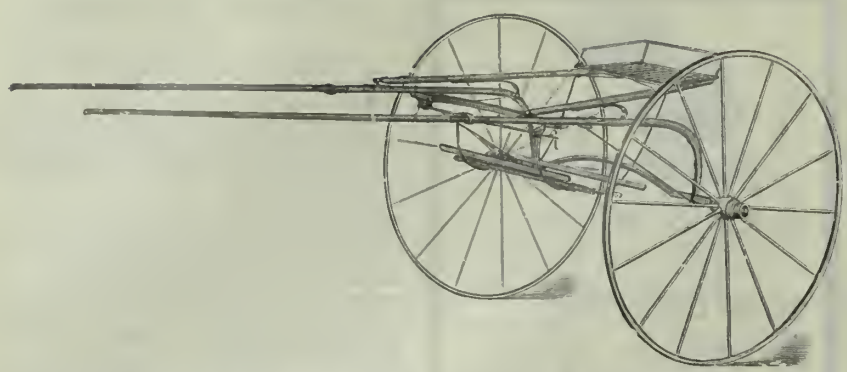

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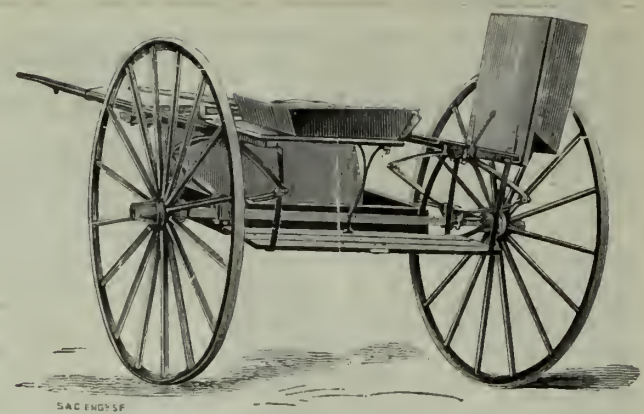

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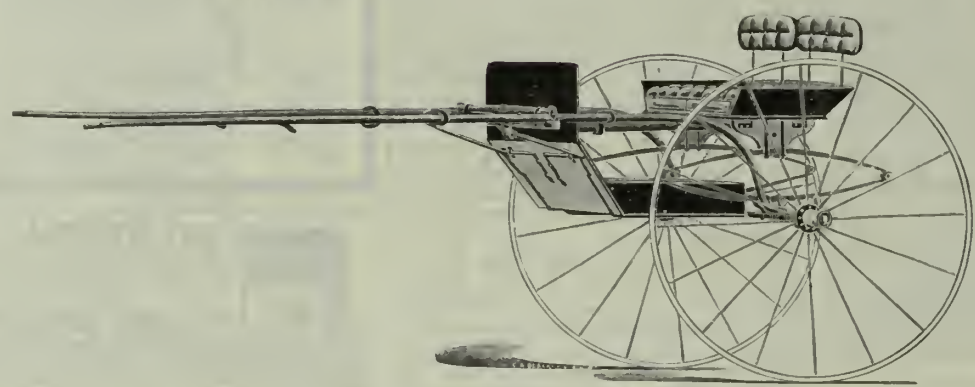

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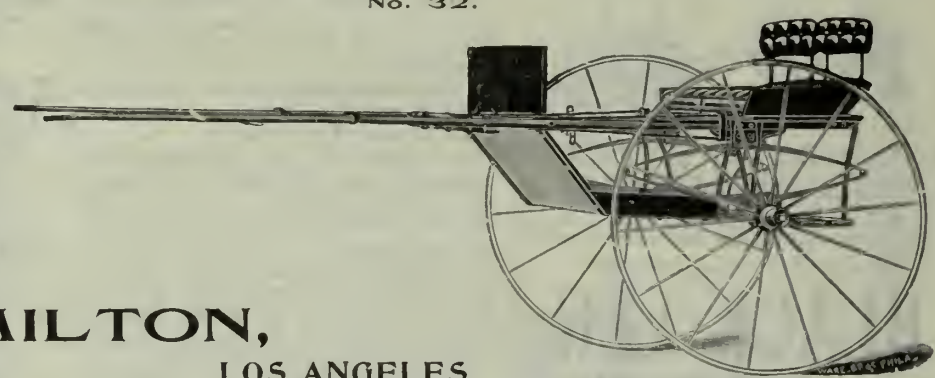

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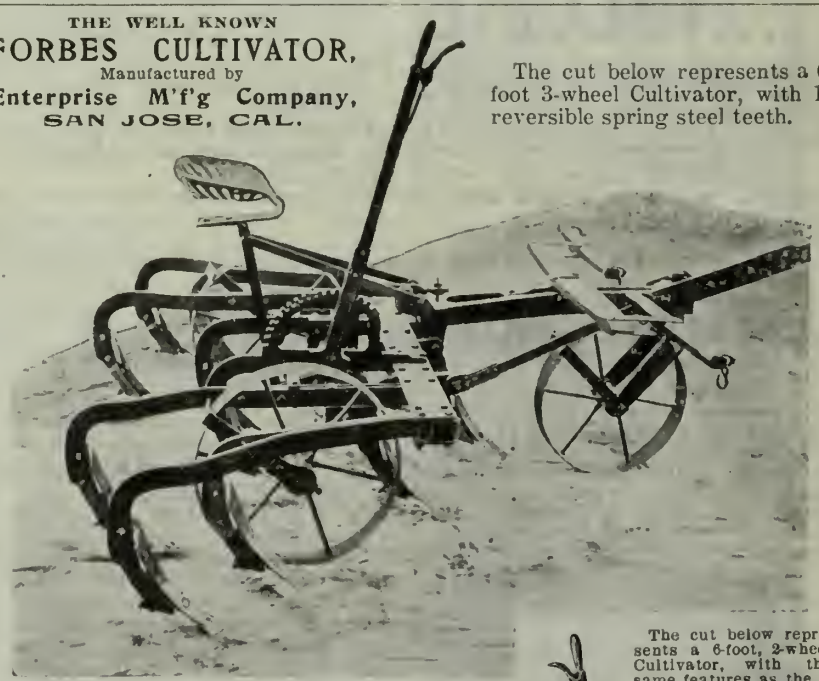

The cut below represents a 6-foot, 2-wheel Cultivator, with the same features as the 3-wheel Cultivator, except the pole, which is rigid.

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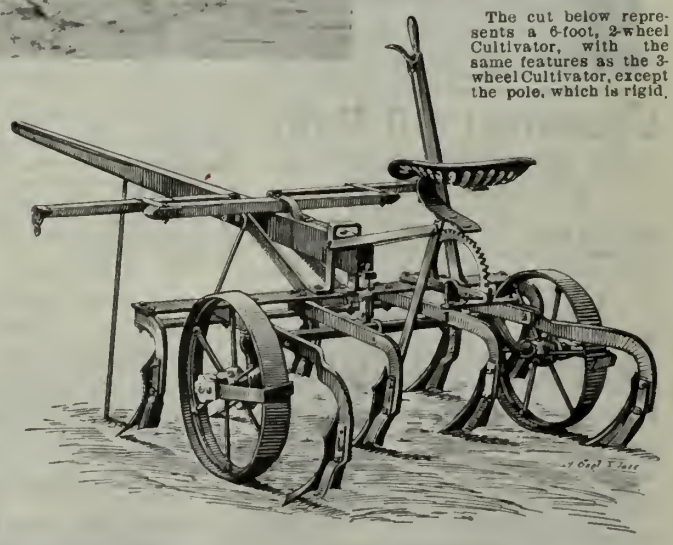

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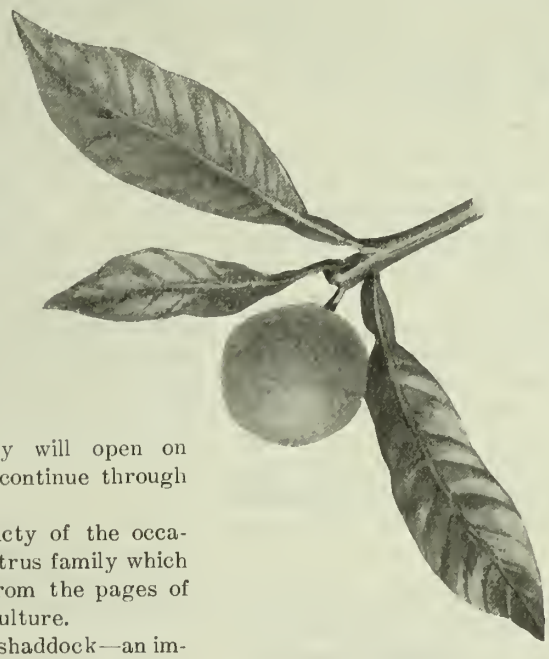
THE PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 7. SAN FRANCISCO, SATURDAY, FEBRUARY 16, 1901. THIRTIETH YEAR. Office, 330 Market St.

Little Known Citrus Fruits.

Next week there will be held the Ninth Annual Citrus Fair at Cloverdale, Sonoma county. Cloverdale occupies a cosy nook at the point where Russian river breaks through a mountain barrier and takes its way through rich valley lands to the ocean. The brisk little town is very picturesque for situation, and it lies in an environment of hillside, bench and valley lands, which are adapted to a very wide range of valuable products. Long ago wide-awake residents began to try citrus fruits and the product was so charming that nearly a decade ago special citrus fruit fairs were begun. It is interesting that, though at that time midwinter citrus fairs were numerous, Cloverdale is the only district which has maintained them in regular sequence to the present, and this year's display will open on Wednesday, February 20th, and continue through the week.



The Round Kumquat.

The Pear-Shaped Shaddock.

As our contribution to the variety of the occasion, we illustrate fruits of the citrus family which are not familiar, plucking them from the pages of Mr. Lelong's treatise on Citrus Culture.

First in size is the pear-shaped shaddock—an immense fruit of which the picture is reduced one-half. It is smooth-skinned, lemon yellow and handsome—in fact, its size and beauty are its chief claims, for its pulp is acrid and the skin a good timber for making bitters. It is a conspicuous mantel ornament, and the Chinese use it at New Years in their homes and joss-houses as a telling decoration. It is often seen at citrus fairs, but otherwise does not claim public attention.

The Trifoliate Orange.

The Fingered Orange of Japan.

The Oval Kumquat.

Quite otherwise is it with the two kumquats which are shown—one round and the other oval. These are natural size in the pictures. They are growing in favor for preserving, the oval being superior. The whole fruit is processed and the characteristic aromatic flavor of the rind gives the whole a very pleasing taste. The fruit grows on a bush 4 to 6 feet high, which is very desirable as a garden ornament.

Perhaps the most curious citrus fruit is the fingered orange of Japan. The picture shows well why it has this peculiar name. It is said to have medicinal value, but its chief use will be for ornament by those who do not consider it ugly.

The deciduous or trifoliate orange of Japan is another curious affair in many ways. It departs from the evergreen type, but keeps the color in its flat branches and immense thorns, though its scant leaves fall. The fruit is of little account, but the plant has good hedge points, and it is also used by the Japanese as a dwarfing stock for the growth of their kid-glove oranges. As it is quite hardy, it will do to carry the citrus atmosphere farther north than the sweet orange can.

The Otaheite Orange.

Cluster of Tahiti Seedlings.

The same may be said of the Otaheite orange, of which a branch is shown. This is probably the most hardy of the citrus family, and is successfully used a certain distance northward on the Atlantic coast for an ornamental shrub. It is also used as a dwarfing stock in Florida. California does little with dwarfing stocks of any kind; even the small Japanese citrus fruits are here put upon a free stock with the idea of causing larger growth and fruiting.

Our group of pictures includes also a cluster of Tahiti seedling sweet oranges. These are interesting because so rapidly passing from view in this State. Twenty-five years ago these were the chief of the California product, but now the Tahiti is mostly underground, and sap is being pumped into the better budded varieties which have been established upon them. Formerly the rotten orange from the south seas was a commercial article in this city, being sold by the barrel to citrus nurserymen; but now the plumpest seed from locally grown seedlings constitutes the supply.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, February 16, 1901.

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The Week.

The rainfall has passed the point where it has to be looked after—in fact, it is fast approaching the point where it ceases to be interesting, except to those who are getting too much. Look at the surprising facts shown in the rainfall table on the opposite page. Los Angeles has as much as Sacramento, and San Francisco is about the same, while San Luis Obispo has nearly twice as much as any of them. Southern Californian points are thrice the figures of last year and considerably more than their normal supply. This is why fear of scant moisture has passed away, and the whole State is as well fixed for large crops as it has ever been since its history began. No wonder business is active, and all kinds of promising enterprises have a buoyancy not known for years. Prosperity is here.

Prosperity is perhaps more tangible in California than elsewhere because here prosperity largely means people. Current reports are that tourists are sleeping three in a bed in southern California and taking delightful baths in the unusual rainfall. The presence of new people is also clearly discernible in other parts of the State and the railway managers state that the tide has hardly set in yet but it is coming. This will be a great advantage to many producing interests which need more help than is at present available and unless the movement should run to excess is much to be rejoiced over. We have, it is sad to say, to take the bitter with the sweet and "good times in California" is the message which is passing by grapevine telegraph to all the hobo camps on this side of the Rocky mountains. It is reported that 150 tramps in a body are coming to California by the Shasta route at the present time. It seems to be the rule that where work is plenty, begging is also productive. Thrift and idleness prosper together: is it another instance of the duality of the universe?

Speculative wheat market has been sinking and reaches the lowest point for the week as we go to press on Wednesday. There has been a reduction in the world's visible supply, but that does not awaken a buying appetite, as it is offset by the fine outlook locally. Spot wheat shows sympathy, but is not so degraded as the speculative market. Barley is weak but not lower, except on feed, perhaps, which is crowded down by the stuff which is screened out of shipping barley, and is thus used to make it easier to buy the better grades. Oats are firm and in light supply. Rye is dragging and lower. Beans are quiet and lower. The Government has taken some Large Whites, but has other bids still under consideration for a few days. The supply of white beans is small and strongly held; colored beans are not in much demand. Bran is stiffly held and there are small supplies, chiefly of Northern. There is nothing new in hay, which is quiet at the old figures for good lots, while common hay is weak, even at low prices. All meats are firm and hogs have advanced; Eastern hogs are still coming, but local supplies are light as yet. The best butter is firm and in good demand. Eggs are falling, but go well at the lower figures, as there is quite a shipping movement. Poultry, as a whole, has a better tone and lighter stocks, but no particular advance. Choice potatoes are looking up. Onions are higher and in light supply. Fresh vegetables are very scarce and sell at fancy prices. There are rather fewer oranges and choice have sold better, but are not very active. Lemons are unchanged. Fine apples are almost out of sight and command stiff prices. Dried fruit is about the same—some small selling, but no general movement. A few outside prunes are selling at higher rates—that is, nearer to the Association prices. Wool is quieter than ever. There seems no disposition to operate at present, though prices are not complained of.

It will be a bad year for the beef eaters, for the available supplies are being gathered in. Shipments are coming this way from Mexico and Texas, as stated recently, but even the local coast product is being carried away eastward. The Record-Union says that buyers in Nevada have warned their firms that a further advance is sure to come, and predict that before spring opens carcasses laid down in the rough at Reno will be worth 10 cents per pound. It is stated that in eastern Oregon Chicago buyers are gathering in every available hoof, but in western Oregon and Nevada the California markets have no competitors. Just how high beef will go is a matter of conjecture, but that it will continue to rise seems certain.

The Prune Association is working away zealously at its difficult problem. The San Jose papers are working hard to furnish the purchasers a new cooking recipe with each prune and they bid fair to do it. They are thinking about printing their papers with prune juice. The Association proposes to enter upon a broad plan of reaching Eastern consumers. The officers are now empowered to spend a certain amount of money for warehouses, etc., but they need also to make expenditures to advertise the goods so that they can empty the warehouses, and a meeting is to be held Feb. 21st to confer this power. There is being sent to each member a copy of the proposed amendment to the by-laws, with an extract from the original by-laws showing the section proposed to be amended and a voting blank, upon which those members who will not be able to attend the meeting may send in their votes by mail. This has been done in compliance with the requirements of the by-laws in the matter of making amendments. The directors ask the power to expend as much of the combine's funds as they see fit in the proper advertising of California prunes, and in the promotion of their sale and consumption. It is argued that if this is granted the prune market will be placed on a firm basis not only this year, but for all time. Among the plans suggested at San Jose is one of putting young ladies in the leading stores of the Eastern towns, and teaching them to prepare and serve California prunes. The fruit will be placed on sale in these stores, and samples of it cooked and served at little tables. Many other similar plans have been suggested, some of which will probably be put in operation if the necessary power is given to the directors. All this is very enterprising, and past experience, in a small way, warrants expectation that it will make a great impression. The fact is that the distant people have got to eat these prunes, and it will save them a lot of doctors' and druggists' bills if they learn it as soon as possible. Talk about sugar-coated pills! Their occupation will be gone as soon as the new schemes begin to operate. It will be health to the East and wealth to California.

We have some fine letters in preparation for print on the use of resistant stocks for California vineyards. There is no more important proposition and none for which the people are better prepared. Fortunately, the results of many years' experience are ready for our guidance, now that the phylloxera must be circumvented almost everywhere, and still there is so much to be learned. As the question of restoring vineyards rises anew every time a new region is invaded by the insect, because different roots must be used to meet local conditions of soil and climate, there is continued need of trial and continued interest in results already secured. We are glad, therefore, that we have now in hand several interesting and carefully prepared contributions, and there will be more to follow. The more the better, when they are based upon close observation and experience, and those who have not yet made such contributions for the public edification should be marshaling their facts and deductions. This symposium will begin in our next issue.

The Department of State at Washington has committed itself to an undertaking by which the United States Consuls at all points shall secure information about foreign fruit crops and prices for the benefit of American growers and exporters as soon as the California fruit growers should furnish to the department precise information as to what is desired. Mr. Edward Berwick of Monterey is chairman of the California committee which has secured the concession from the State Department and the committee now desires that it be immediately informed of the precise information desired by each branch of the fruit industry, with the locations of all Consuls who can be expected to give it. The fruit industries specially interested are supposed to be the raisin growers, prune growers, citrus growers and the producers of walnuts and almonds, but as a matter of fact the enterprise includes all producers of fruits capable of export and their dried or otherwise preserved products. It also includes all such products imported to this country. This committee will have a busy year if all those interested rise to the opportunity and the State Department will conclude that it has struck something bigger than the Philippines before they finish with it.

It is interesting to note that, though California is only very rarely much of a State for grasshoppers, it promises to be best fortified against them. Alexander Craw, quarantine officer of the State Board of Horticulture, has received from Australia a consignment of tachina flies, which have a special appetite for grasshoppers. The flies will be kept in cold storage at a temperature of about 35° until May, when they will be liberated simultaneously with the annual appearance of the grasshoppers. The Australian consignment also comprises a considerable number of lady birds, which are believed to be adapted for the destruction of the red scale. The shipper of these specimens is George Compers, who is in South Australia as the special agent of the State Horticultural Board.

A very important rumor has chased itself from San Francisco to Los Angeles and back—that the Southern Pacific Company had bought all the cars of the Continental Fruit Express, over 1500 in number, the consideration being in the neighborhood of $1,000,000. If the Southern Pacific has bought the fruit cars, it is one of the biggest business deals consummated here for a long time. A leading railroad man in Los Angeles says he knows the report is true and that the sale was effected on account of the decision of the Interstate Commerce Commission that after this season railroads must carry fruit in their own cars. This is, on the face of it, a very promising affair in our overland shipping, and has the possibility of striking a very costly and unnecessary lot of friction out of the line between the grower and the distant market.

Wheat is being finely cleared out at the north. Estimates of the wheat now remaining in the Palouse and Walla Walla districts show that the warehouses contain only 10% to 15% of last year's crop. Since September more than the entire crop of 1900 has been shipped, since at that time the warehouses also contained considerable grain left over from 1899 and 1898. The amount of wheat remaining is the smallest ever known at this time of the year.

A mammoth prune arch has been suggested by Mayor Martin of San Jose in honor of President McKinley's visit in May.

QUERIES AND REPLIES.

Potato Blight.

To THE EDITOR:—For several years I have been troubled with blighting of my potato crop. The land is deep, rich, sandy soil, and has been in potatoes for several years in succession. The crop would look very promising until the potatoes were about the size of a walnut, and then they would be struck with blight, and the crop, of course, would not mature and the potatoes, what there would be of them, would be of inferior quality. Can you suggest a remedy?—AMATEUR, Carpinteria.

The blight is caused by a fungus (phytophthora infestaas) which attacks the tops, showing first as brownish coloration of the outer ends of the leaves and rapidly extending over the leaves and involving the whole plant and the tubers, utterly destroying the crop. The disease does not usually appear until the plants are well grown. The remedy is very successful if faithfully applied as soon as the first signs of the disease are seen on the leaves, or, even better, a little in advance of this, for if the foliage carries the remedy the disease is practically precluded. Use the strong form of Bordeaux mixture, of which the formula is given on another page of this issue in connection with the discussion of the "brown rot" of fruits. The potato stands Bordeaux well. Spray once when the tops have made a good growth, but before the disease strikes them, and it may be also necessary to again touch the later growth, but in our rainless summer one treatment may be sufficient. Sometimes the disease may be avoided by changing seed, for many new varieties are at first practically resistant, but they seem to weaken later. Changing seed potatoes is a good thing for other reasons also, and it is also a good plan to get potatoes on new land as far as practicable.

Disinfecting Nursery Stock.

To THE EDITOR:—As a precaution I want to immerse nursery stock, soon as received, and before setting, in a solution certain to kill any scale or other insects that may infest it. In your opinion, is the lime, sulphur and salt mixture proper and effective for this use? If not, what solution would you recommend for grape, plum, cherry, apple, etc.?—COLORADO.

We should not dip into lime, salt and sulphur wash for fear of injury. Well made kerosene emulsion is good for many insects and their eggs. The use of vapors instead of dips is now popular and more effective. Cuttings, scions, young trees and vines, etc., can be freed from insects by inclosing in a tight box or cask and placing a saucerful of carbon bisulphide on the top of them, covering it with canvas or any tight-fitting cover. The bisulphide vapor will destroy all insect life in forty minutes. Disinfecting such materials on a larger scale is done by Alexander Craw, State Quarantine Officer, in this way:

Use square canvas sheets, 16 to 20 feet in diameter, made of the best ducking, double stitched and then painted with boiled linseed oil to make it gas proof. The canvas must be perfectly dry before it is rolled up, or it is liable to be destroyed by spontaneous combustion. To fumigate evergreen stock use one ounce of cyanide of potassium (in lumps, not pulverized), one fluid ounce of commercial sulphuric acid, and two fluid ounces of water to 100 cubic feet of enclosed space. For deciduous and hardy trees, when dormant, use one-fourth more for each of the above. When the canvas has been placed over the stock to be fumigated, prepare the charge. Take a three or four-gallon glazed earthenware jar, into which pour the necessary quantity of water, then the sulphuric acid, and place it well under the canvas, the edges of which are secured with soil or in some way so as to prevent the gas escaping, with the exception of the edge immediately in front of the jar. The proper amount of cyanide of potassium is then dropped into the jar from a long scoop, and the tent is immediately closed, and remains so for one hour.

Katydid Eggs.

To THE EDITOR:—I received some young peach trees with some kind of bug or egg, which I send herewith. Please let me know what it is and what to do for it.—READER, Madera.

These curious katydid eggs naturally attract attention and seem very threatening. We have received two specimens this week, both from the San Joaquin valley. They should be easily recognized. They are oval, nearly one-fifth of an inch in length, flat and smooth, of light or ashy-gray color, and are usually very regularly placed in two rows on the twig, partly overlapping each other. They have a seedlike appearance. They are laid by a katydid—a good-sized grasshopper with a very shrill voice, highly esteemed by poets. The insects are injurious, so far as they go, but they are never abundant enough to do much harm. The treatment is simply to crush the eggs whenever seen, and they are so conspicuous as to be easily seen in pruning or in planting out young trees.

The Longer Catechism.

To THE EDITOR:—If it does not exhaust your patience—and your knowledge—will you please answer the following questions?—C. M. WATERMAN, Magalia.

Is there any objection to plowing patato seed under in such sod as results from the winter growth of grass, grain and weeds?

No.

If potatoes want to grow "rather permaturely," is it better to keep them sprouted continuously or let them grow and sprout them once for all just before planting?

Sprout once, or you will use up all the dormant eyes.

How long a sprout is useful to a potato seed at time of planting?

Whatever length can be handled without breaking.

When other conditions are favorable, ought such crops as beans and potatoes do well on poor ground with a liberal application of commercial fertilizer alone?

Yes.

Of the three principal elements of fertility, which is the more liable to be lacking in soil brought over a lava flow by glacial action and afterwards more or less heated by the underlying lava?

Nitrogen.

Would an application of land plaster be of any benefit to alfalfa planted on poor soil and under unfavorable conditions, but fertilized with potash and superphosphate?

Yes.

Are there any native lupins in the foothills of California sufficiently poisonous to seriously affect horses when eating the hay among which they may happen to grow?

No; but there are plants which look a little like lupins which are poisonous.

Is there really such a disease among horses as "fern staggers?"

We do not know.

May quicklime be used for all purposes—except on black alkali—for which plaster is useful?

No; plaster performs some offices which quicklime can not.

What Will the Tragedy Take?

To THE EDITOR:—I have fourteen acres of Tragedy prunes coming in bearing. I am told there is no profit in shipping the fruit East or in selling it here fresh. Is there any profit in drying it? Our climate here is excellent for drying, and the fruit ripens about ten days later than at Vacaville. Can the trees be successfully grafted to the almond, peach or apricot, or can they be grafted to something more profitable? Our soil and climate here is all right for all kinds of prunes, peaches, apricots and almonds.—GROWER, Brentwood, Cal.

The Tragedy makes a dried plum. It is too tart and loses too much weight to be called a prune. Judging from the fact that so many are being grafted over, it is not profitable as a drying fruit. We do not know all the things that the Tragedy will take successfully in grafting, but more people are putting in Sugar prunes than any other fruit. It ought to take any other plum or prune. For the other fruits you mention we cannot answer. Who has results with them?

Almond on Peach.

To THE EDITOR:—Among the almond trees in my orchard are three peach trees, which my predecessor let come up from the root, after the little almond trees died. They are now four years old. Can I work them over into almonds?—SUBSCRIBER, Fair Oaks.

Certainly. In grafting into the peach, however, one has to take extra precautions, for the peach bark is apt to dry back and act ugly. It is best not to split the stock, but cut in obliquely with a saw, smooth the cut with a sharp knife and then fit the scion nicely at one side of the cleft and tie closely with a waxed band which is allowed to go over the stump to protect the cut surface at the top also. Work into the smaller limbs, and not in the main trunk, if you can avoid it.

Polled Angus Cattle.

To THE EDITOR:—Will you kindly give us the names of any breeders of thoroughbred Polled Aberdeen Angus cattle in this State and out of it?—WOOD & Co., Danville.

Breeders of good stock should see to it that PACIFIC RURAL PRESS readers do not have to ask such questions. Announcements should be kept standing in our advertising columns. The people are more anxious for good stock now than they have been for years, but they can not give heed to your kind of stock unless you tell them of it. If some reader will make a sale to Messrs. Wood and then put the money into advertising, he will soon conclude that he is in the breeding business for something more than his health.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 11, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature has been below the normal nearly all the week and severe frosts have occurred in most places. Rain has fallen in all parts of the valley and snowstorms have occurred in several localities. In the valleys the snow was light and remained on the ground but a short time, but the foothills and mountains were well covered. The cold weather has had no injurious effect thus far, except in retarding the growth of green feed, and has been beneficial in keeping back deciduous fruit buds. In many sections the soil is too wet for cultivation, and there is some danger of injury to wheat from the continued rains. Seeding is progressing wherever practicable. Grain is still in good condition, but would be benefited by sunshine and warmer weather. Almonds are in bloom in Yolo county.

COAST AND BAY SECTIONS.

Cool weather has prevailed during the week and heavy frosts have occurred in many places. Rain has fallen in all sections and snow is reported at many stations, the snow having been unusually heavy in the foothill and mountain districts. The observer at San Luis Obispo reports that 15,000 acres of grain in that county have been washed out by the excessive rains and will have to be replanted; also that wild pigeons are causing great damage to grain. In some sections the heavy rainfall has made the soil too wet for further grain planting this season, and the acreage will not be as large as has been expected, but the summer-fallow for next year will be proportionately increased. Grain and grass continue in good condition in most places. Orchards and vineyards are looking well and pruning is progressing.

SAN JOAQUIN VALLEY.

Low temperatures have prevailed during the week and severe frosts have occurred in some sections. Heavy rain has fallen at intervals in nearly all parts of the valley and there has been an unusually heavy fall of snow in the mountain districts. Rivers and creeks are running bank full and in some places the streams have overflowed, causing considerable damage to roads and canals. The ground is thoroughly saturated and storage reservoirs are filling rapidly. Plowing and seeding have been suspended and cannot be resumed for several days, owing to the heavy condition of the soil. Very little work is being done in orchards and vineyards. Early grain is looking remarkably well, but later sown needs sunshine and warmer weather. Deciduous fruits are in good condition.

SOUTHERN CALIFORNIA.

Cool weather has prevailed during the week. Unusually heavy rain has fallen in nearly all sections and in the higher elevations and mountain districts there has been a heavy fall of snow. The storm has caused no damage to crops, so far as reported. Mountain streams are running full and the storage reservoirs are filling rapidly. The soil is new thoroughly saturated and farmers state that the precipitation has been sufficient to insure good crops of barley, wheat and hay. Farm and orchard work has been temporarily suspended. Grain and feed are in good condition, but have made slow growth during the cool weather, and would be benefited by sunshine.

EUREKA SUMMARY.—Comparatively little farm work is being done on valley lands. On higher levels plowing and seeding are in progress. Fruit trees have not been injured by frost.

LOS ANGELES SUMMARY.—Nearly steady rain in the valleys and snow in the mountains, well down. Rain fell heavily in sections, causing damage in some places, washing grain fields, orchards and roads. Soil is well soaked. Vegetation is growing rapidly.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Feb. 13, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.28	31.52	35.15	27.17	30	58
Red Bluff	1.24	19.11	15.29	16.66	30	58
Sacramento	.44	13 76	13.69	12.78	32	52
San Francisco	.29	14 53	14.57	15 01	38	56
Fresno	1.00	9.30	6.15	5 63	32	62
Independence	.14	4.83	2.09	4.37	22	48
San Luis Obispo	1.10	26.68	12.50	12.71	32	66
Los Angeles	1.62	13 53	4.57	10 90	38	66
San Diego	3.52	8.50	2.65	6.16	44	62
Yuma	3 46	3 60	.76	2 31	38	62

HORTICULTURE.

Brown Rot of Stone Fruits.

By Frederic T. Bioletti, in a Special Circular of the University of California Agricultural Experiment Station

Brown rot is one of the most serious diseases with which fruit growers have to contend. It attacks principally stone fruits—peaches, plums, apricots and cherries, but occasionally does damage to apples, pears and quinces. It is widely distributed throughout Europe and the United States. In some of the Eastern States it is considered the most destructive disease with which the peach grower has to contend. In Delaware and Georgia it often destroys from 25% to 75% of the crop. It is reported to destroy more peaches and cherries in Michigan than all other diseases combined. In Kentucky it is said to be very destructive to apples, and in Oregon it has been the cause of very serious losses to the prune growers for several seasons. In California, though its occurence has been noted for several years, no serious damage seems to have been occasioned until last year, when it appeared abundantly in several localities. Statements were received from prune growers in Napa county that 50% of the crop was rotting in some orchards, and specimens of the diseased fruit received by the Agricultural Station at Berkeley showed brown rot to be the cause. In several large orchards in Alameda county the late varieties of apricots were effected; 25% or more of the crop being destroyed in some cases. All the cases of this disease which have so far been brought to the notice of the station have been in localities not far from the sea, and therefore more or less under the influence of the summer sea fogs. As there seems, however, to be a tendency of the disease to spread in California, and as recent experiments in Georgia and elsewhere show that it can be controlled with comparative ease, the following brief description of the disease and the method of treatment is given.

The Cause of the Trouble.—Brown rot is caused by a mould or fungus called Monilia fructigena, which attacks various parts of the plant, leaves, blossoms, twigs and fruit. Its effects are most evident upon the fruit, but it does an amount of damage that is hard to estimate, by attacking the other parts of the plant, but which some observers consider to be almost equal to that of the rotting of the fruit. The fruit is usually attacked after it has attained full size and just as it commences to soften. The first symptom in the case of apricots and peaches is a brown spot on one side of the fruit. This spot gradually enlarges and becomes covered with small ashy-gray pimples which consist of myriads of the spores of the fungus. Soon the whole fruit turns brown and the entire surface becomes covered with spores. The fungus then passes from the rotten fruit through its stem into the twig. Finally the disease attacks the twig so severly that it dries up, loses its leaves and dies. The accompanying illustration shows apricots and twigs in various stages of the disease, and the gradual progress from the fruit to the twigs is well shown. In the fruit on the left, by looking closely it can be seen that the lower side is darker-colored than the upper, and that the light-colored spores have commenced to appear. The middle specimen is covered with a layer of the pimple-like masses of spores, and the leaves have commenced to wither; while in the specimen on the right the leaves are quite dead and the fungus has passed into the twig. The appearance of the disease on plums and prunes is somewhat different. In none of the specimens received at the station were the spores formed when they arrived. The appearance of the diseased plums was not at first very different from that of the normal ones, but when they were cut open the inside was found to be discolored. When placed in a moist, warm place, however, the spore masses developed in one or two days, and then the appearance was very similar to that of the diseased apricots.

The attacked fruit, instead of becoming soft and falling off, as with most other rots, gradually dries up and often remains firmly attached to the tree until the following spring. In spring a new crop of spores is produced by the mummified fruit, and, in the case of peaches, the young growth and blossoms are attacked. The same probably occurs in the case of apricots and other fruits. One of the worst features of this disease is that the fungus may be in apparently healthy fruit. Peaches which when picked and packed showed no sign of the rot, may be completely spoiled when the boxes are opened two or three days later.

Treatment.—As the fungus passes the winter principally upon the mummified fruit, the most effective method of combating the disease is to remove and destroy thoroughly all the diseased fruit. The diseased apricots should be gathered and destroyed as soon as the appearance of brown spots indicates that they are attacked, and not left on the tree until the fungus has penetrated the twigs. No fruit should be left on the surface of the ground. Any fruit which falls near the base of the trunk should be raked away in order that it may be buried by the plow. These measures alone, thoroughly applied, have been sufficient to produce a notable diminution in the amount of fruit attacked; but complete immunity can be obtained only by proper spraying in addition. All orchards where there is reason to suspect the presence of the rot, such as those where it appeared last year and those in their immediate neighborhood, should be sprayed with Bordeaux mixture one or two weeks before the blossoms open. This will prevent the infection of the blossoms, and in the case of peaches will also prevent curl-leaf. A winter wash with our ordinary lime-salt-sulphur mixture would doubtless be nearly as effective against the brown rot, and where used for destroying scale and other insects, the first spraying with Bordeaux might be omitted. In any case where the brown rot appeared last year, the trees should be sprayed with Bordeaux as soon as the fruit has set. These measures will, in most cases, be sufficient with early fruit; but for the late-ripening varieties, such as Moorpark apricots, a third spraying should be given about a week or ten days before the fruit commences to color. As Bordeaux would stain the fruit at this time it is better to use a spray of copper acetate.

Bordeaux mixture is a fungicide consisting of bluestone (copper sulphate), lime and water, mixed in various proportions according to the season and to the kind of tree to be sprayed. For the first spraying, before the buds have started, the following formula can be recommended:

Copper sulphate	5 pounds
Unslaked lime	5 pounds
Water	45 gallons

For spraying the trees when in leaf it is better to use less sulphate and more lime, especially on peaches, in order to avoid danger of injuring the foliage. For the second and any of the subsequent sprayings the following should be used:

Copper sulphate	3 pounds
Unslaked lime	6 pounds
Water	45 gallons

Directions for Mixing.—1. Suspend the copper sulphate in a basket or perforated wooden box, in a barrel containing half the water. The sulphate should be just below the surface of the water in order to dissolve quickly.

2. Slake the lime slowly and with great care to insure a perfectly smooth paste free from grit. After the paste has stood for twenty to forty minutes, with enough water to ensure it from drying, dilute with the remainder of the water and strain through a wire sieve.

3. When the sulphate is dissolved and the milk of lime quite cool, stir each mixture well and pour them together into a suitable receptacle.

If large quantities of Bordeaux are needed it is more convenient to make two stock solutions as follows:

A.—Copper sulphate, 50 pounds; Water, 25 gallons.
B.—Quicklime, 50 pounds; Water 25 gallons.

These should be made up in the way already described and separated until needed. For use take half a gallon of solution A for every pound of copper sulphate, and half a gallon of mixture B for every pound of lime wanted; dilute each separately with a little less than half the water; pour together and make up to the requied volume with water, stirring thoroughly. Never mix the lime and copper liquids when hot.

The spray should be made as short a time as possible before using and should be applied when the trees are dry and the weather calm. Only the best quality of lime should be used.

For Use When Fruit is Large.—The spray for use when the fruit is large is made by mixing six ounces of copper acetate (dibasic acetate of copper) with forty-five gallons of water. When the acetate is quite dissolved and mixed with the water it is ready to be applied.

Effect of Brown Rot on Fruit and Twigs of Apricots.

The Convention's Transportation Committee.

To the Editor:—In your issue of Feb. 2 you published a letter from Edward Berwick of Monterey, requesting information as to what had been done by the committee on transportation appointed at the State Fruit Growers' Convention held in San Francisco, Dec. 4–7, 1900, and reference was made to me as chairman of said committee.

In reply I will say that the committee has not been idle. On the contrary, there has been much hard work done in efforts to gather information that will establish the fact in the minds of those who control the transportation companies that handle California green fruit shipments in Eastern markets that the request made by the growers and shippers in State convention assembled is but just, and if granted will greatly benefit all factors interested in fruit growing in California, not excepting the transportation companies themselves.

In regard to his reference to Mr. Hays, president of the Southern Pacific, I will say that it could hardly be expected that President Hays would be prepared and ready to take up and give serious consideration to such an important matter so soon after his induction into the official position he now holds.

There is yet plenty of time to act, as there will be no green fruit shipments made before June.

I feel confident that Mr. Berwick and all other growers will be perfectly satisfied with the action of the committee when it is through with its labors.

R. D. Stephens,
Chairman Committee on Transportation.

Sacramento.

The Sugar Prune.

To the Editor:—I have lately read two letters in your paper concerning the planting of prune trees. One writer asks advice as to what variety to plant; another ridicules the idea of planting any. I would like to ask if the Sugar prune tree, as far as it is known, is a good bearer and a strong tree. Does it stand late frost as well as the French prune.—W. S. Smith, Del Rey.

All that we have heard so far is favorable to the Sugar prune, but there is naturally much to be learned about it by local trial. It is not yet old enough to have its traits fully known. A writer for the San Jose Mercury says:

A number of growers are experimenting with the Sugar prune in Santa Clara valley, and while some are enthusiastic others are quietly waiting for results. Sivert H. Shelley, a grower who resides on the Mabury road, east of San Jose, says that two years ago he grafted about a thousand Sugar prunes on peach, Petite prune, apricot and almond, and that all have done well. He finds the Sugar prune a vigorous grower. One tree grafted in February bore several prunes, thirty in size, in July, less than six months after the graft was made. These prunes fell on the ground and cured there. Mr. Shelley be-

lieves in the Sugar prune, and he is convinced that it will get size and ripen before the dryest portion of the season sets in. In a letter to Mr. Shelly written July 19th of last year Mr. Burbank said: "Sugar prunes are even better this season than ever before. They are ripe and ripening now, while the French prune is not nearly half grown. The trees are great and regular bearers, the best of growers, and have so far developed no fault. I have no better prune than the Sugar prune and see no prospects of ever getting a better one. Most growers say there is no use trying. The Sugar prune is four weeks earlier than the French prune. Frost that killed the French prune did not affect these."

S. F. Leib, the pioneer prune grower of this valley on a large scale, grafted a number of Sugar prunes on French prune trees in his orchard last year, and this year he is grafting forty acres. But it is, he says, as yet merely an experiment, and he has no advice to give the other growers, every one of whom must be his own judge as to the value of the Sugar prune and take his chances in experimenting with it. It is a magnificent prune, leading in size and quantity of sugar, but it has not yet been thoroughly subjected to the tests of soil, climate, propensity to fall when ripe and curing qualities.

The Sugar prune, in fact, will be in its experimental stage for some years to come.

Shall We French-Process Our Prunes?

To the Editor:—In the present very perplexing prune situation, I do not know whether the accompanying consular report, dated Junuary, 1901, will prove of any service. It shows at least two points of interest: First, that the past season's crop in France has been very large; second, that whether her crop be large or small, the French crop is put up in such exquisite form that, with a little abatement in price, according to supply, buyers are always tempted by such fruit.

While in the south we are not prune growers, yet all deciduous fruit growers are desperately interested in their grave situation, because the stagnation in prunes is a dark cloud upon the general dried fruit horizon, and any steps which the prune men can take to improve their methods will tend to the general welfare.

It will not, we hope, often happen that, given a large crop of prunes in California, there will be, not only a large crop in France, but also an immense apple and peach crop in the Eastern States—coinciding with one another, as in the past season; but the time has surely come when every effort must be made by growers of all kinds of fruit to put up their fruit in the best possible form.

Can not the associations take up the question of adopting the French methods for at least the better-sized fruits, and try to eliminate as much as possible the great quantity of very inferior stuff that is forced upon an unwilling market? If they have not already done so, let the associations obtain sample boxes and jars of the finest French imports and see if there is nothing to be learned. The lemon growers in the south got a fine lesson when a few boxes of fancy Sicilian lemons were brought here for inspection.

Pasadena. Morton Haig.

We are deeply indebted to Mr. Haig for his suggestions, and the interesting pamphlet which he sends is one of the British Consular reports, with a description of the French way of oven-curing and canistering prunes, which our prune growers understand quite well. Before Mr. Haig entered the Pacific Rural Press circle, the French methods and policies were quite fully discussed in our columns by Mr. Felix Gillet of Nevada City, who has himself made as fine large ovened-prunes as were ever made in France, we believe. Processing prunes has also been tried on a large scale by other prune growers, who long ago abandoned it because of the increased cost, which could not be profitably covered by commensurate increase in selling price. Since then all our prunes have gone by the sunshine route, which seems to be about the only way to prepare the immense amounts which our orchards are producing. We have succeeded in producing a prune of unique character, a better looking prune than the French, which is already partly cooked and which is flattened in flavor by the second cooking. Of course, as Mr. Gillet has urged, we might make dessert prunes to be eaten as they come from the elegant package, and not to be subsequently cooked. But the chance for that product is limited; perhaps a few producers might make it pay. We ought to do everything to popularize our prune and make it as fine as it can possibly be made. Perhaps we can do something with the French oven and high-class packing, but to think for a moment that any considerable part of our product can be profitably treated and sold in that way is at present unwarranted. The bulk of our product must probably go as a stewing fruit, with a sweetness and flavor quite different from that made anywhere else in the world, so far as we now know, because there is only one California sunshine.

ENTOMOLOGICAL.

The Crown Borer of the Peach.

Ed. M. Ehrhorn, horticultural commissioner for Santa Clara county, gives the San Jose Mercury an interview in which we have the crown-borer doctrine up to date. Commissioner Ehrhorn says the insect is no worse than for years past. In fact, he believes the evil done is not so great now as in some years past, since more intelligent effort is being directed to combat the borer. With probably half of the prune trees of the county on peach roots, there is a favorite field for the borer to work.

How to Fight Borer.—In speaking of the best methods now known to fight the borer, the commissioner said: "The carbon bisulphide has proved a great success in some instances, while in others it has done no good. In some orchards it has done harm, as it has killed the trees. Where the trees were injured it was due to the faulty way in which the chemical was applied. It should never touch the bark or root of the tree. If it is the pure article it will hurt the tree; yet if it is not the pure article no good will be done. Where the application of the carbon bisulphide has not proved successful it is because it was an inferior article. There has been great complaint about this. Orchardists will not pay $4 for a five-gallon can of this stuff and then go to all the labor necessary to apply it and obtain no results. I have tried to learn from the manufacturers the cause of the difference in the chemical. They say they cannot explain it. I am of the opinion that the trouble is due to an inferior or adulterated article. Cheese is cheese, but there are lots of kinds of cheese.

"The grower must apply the carbon bisulphide with great caution. The best plan is to dig a circular trench around the tree, being careful not to touch the roots. Pour a little of the liquid in this and cover over with earth. The fumes of the chemical will do the rest. Some experiments have been made of putting some chaff in the trench and pouring the liquid on this. This has been highly successful, as the porous nature of the chaff or straw permits quick work of the fumes. The chaff must be covered with earth.

"I find that many orchardists, afraid of the chemical or disgusted with the inferior article, are picking out the borers by hands. They are preparing then to bind paper around the trees this spring. The paper's edges are folded so as to break all joints, leaving no possible opening for the borer to reach the body of the tree. The moth lays its eggs on the paper just as readily as on the bark. After it is hatched it can find no opening in the paper to reach the tree and perishes. Whitewash on the trees is good, but soon ceases to be a protection as it leaves openings.

For State Aid.—"I am very much in favor of an appropriation by the State of $5000 to be paid for the study of the habits and life of insects which prey on our fruits and trees. We are just starting in this line and practically know nothing. When the life and habits of an insect is known we have more than half won the victory. This is demonstrated in the history of the peach twig-borer."

While Commissioner Ehrhorn was too modest to say so, he has made the most valuable discoveries in regard to this last named pest and is given credit for it in the official publications of the Department of Agriculture at Washington. Growers are now able to control it. There is need of the study of the tree borer and the vine hopper.

FRUIT MARKETING.

What May Come of It All.

To the Editor—In response to my letter, published in your last issue but one, R. D. Stephens has kindly sent me a copy of a memorial he has drawn up on behalf of the Fruit Growers' Transportation Committee, of which he is chairman, for presentation to the railroads that handle green fruit shipments.

To this memorial he "has been engaged for some time in efforts to secure the endorsements from all the shipping firms in the State."

The memorial is on the lines of Frank McKevitt's resolutions, as passed by the annual State Convention of Fruit Growers. It points out, not only the imperative necessity for a time schedule, but also proves it a necessity in the interests of both carriers and shippers. The reasonableness of the demand must be obvious to any business man, as President Wheeler urged in his speech before the convention.

The recent consolidation of railroad corporations should, at least in one respect, work beneficially for the fruit grower. Whenever complaint of delay or mishap has been made to the S. P. authorities, it has been so easy for them to saddle the blame on "our Eastern connections, over whom we have no authority." Like the firm of Splenlow & Jorkins, in "David Copperfield," any piece of extortion or imposition was invariably the work of the wicked, if mythical, partner Jorkins. The S. P. "never done nothin'."

With the whole transcontinental line under one management, there will be no shifting the responsibility onto any wicked partner in the far East.

There is hope, then, that this inevitable consolidation may prove to be in the interest of the public at large. If not, it may awaken the people to a realizing sense that if a few of their number can so manipulate finance as to control the country's means of transportation, it may be possible for the whole people, through their agents at Washington, to so manipulate the national finances as to themselves own the nation's highways and operate them in behalf of the people.

It is ridiculous to suppose that a few can afford to own something that the few added to the many can not afford to own.

As I pointed out many years ago, it is simply a matter of using the nation's credit for the benefit of the nation. It is by the use of credit that our millionaires are created. The credit of the nation is obviously better than the credit of any individual of the nation. What is lacking is the sense and determination to use that credit for the public benefit.

Public attention is distracted to events in Cuba or the Philippines, where "there's glory to be had." We are so ambitious to take up the brown man's burden that we have no time to think of the yoke the transportation companies are so gently putting on our own shoulders by controlling all our arteries of commerce.

If the American people has or ever had a right to anything, they have a right to acquire their own highroads. The railroads are the highroads of to-day.

Monterey, Feb. 10. Edward Berwick.

THE POULTRY YARD.

Another View of J. O. C.'s Trouble.

To the Editor:—I noticed the article by J. O. C. in the Pacific Rural Press of Feb. 2, and I will give my experience. I have had a number of cases such as described.

Sometimes the disease has commenced with swelling and inflammation of the eyes. When I have noticed this I have shut them away from the flock and have bathed their eyes with warm water, with a little hamamelis, applying it with a bit of absorbent cotton. The throat, which I have usually found more or less affected, I swab with a preparation of tincture of iodine and glycerine, equal parts, using it several times per day, with good results.

There is always fever and bowel trouble, for which I am not able to prescribe. Sometimes I have given a teaspoonful of castor oil, sometimes several doses of podophyllin, but with doubtful results. Two cases have commenced with the throat and were so bad before discovered that nothing could be done.

If the crop were full when found and the bird refused to eat and the crop does not empty itself, I should hang it by the feet and gently work the food out.

I do not think this is chicken pox, as there are no scabs except around the head, which I think are caused by the fowls pecking each other.

I give no solid food, but feed the bird cornmeal gruel twice a day, pouring it into the mouth with a spoon. But this would be impracticable if there were many. Subscriber.

St. Helena.

Better Fowls Essential.

George H. Croley, of San Francisco, who is known to our readers as the man who has everything needful for the hen from false teeth to nest eggs, has in his new catalogue this suggestive note about the necessity of better fowls for our markets. He says:

I want to say a word of encouragement to those who are inclined to raise really first-class, properly-fed broilers, roasting fowls and other table poultry. It is practically impossible to find, in the San Francisco open market, even a small supply of table fowls that would be considered in Boston, New York or Philadelphia as anything but second or third-class. Visitors from the East, who are experts at the business, after a careful examination of our markets, have stated that they saw not a single specimen on the counters that indicated proper feeding and would be considered as strictly first-class in their markets. Quite likely this is due chiefly to the fact that the producer of poor stock has, usually, been paid almost, or at times, quite as much as those who send in consignments of better stock. Our well-to-do consumers also seem to lack the knowledge—at any rate, do not appear to appreciate the difference between fair to middling and first-class stock, or are unwilling to pay the prices that rule in the East for the very best. This has been a very discouraging feature, but there is no doubt a remedy. It is necessary for some one to take up the matter thoroughly, discover where the real trouble lies, and direct the producers in the right path. This is what I purpose

doing for my customers during the coming season. But, before any genuine good can be accomplished, a reasonable supply of the proper stock must be available; possibly it must at first be disposed of at much less than its real worth. Other discouraging features may present themselves, but it seems that circumstances warrant the effort. It means many thousands of dollars additional profit to our poultry growers annually if the aim can be accomplished.

Agricultural Review.

ALAMEDA.

ROYAL ANN CHERRIES IN DEMAND.—Haywards Journal: For the past three years the demand for Royal Ann cherries for putting up in bottles for different uses, and known to the trade as the Mariscino cherry, has developed such proportions as to give this cherry a value far above any other. About three years ago the fruit from thirty trees in the Meek orchard was secured by Rheinstrom Bros. of Cincinnati. The experiment showed that there was no further need to import such an article from abroad, and in a few years the establishment of Rheinstrom Bros. covered an entire block; the imported article is fast disappearing in this country. This industry has naturally caused a great demand for Royal Ann cherries and canners are already getting a lively move on to close contracts. The reason for this is that Rheinstrom Bros. have lately closed five-year contracts with many orchardists throughout this valley at 5 cents per pound.

CONTRA COSTA.

IN THE ORCHARDS.—Antioch Ledger, Feb. 9: Robert Cakebread is busy preparing his land for the 1500 almond trees which he will plant this season.——Fred Dahnken, Sr., is going to plant 1300 almond trees on the Whalen place, which he purchased last fall. The trees will be planted about 33 feet apart, and Ed Kimball is superintending the work.——John H. Trythall will add another 100 trees to his almond orchard this season, and they will be of the best variety known. He will also put in a few acres of Thompson seedless, as he is a great lover of raisins.——Richard Trombath will add a number of new trees to his almond orchard this season that will embrace the best variety known. The increase this year will bring the total up to nearly 3000 trees. Richard says he would rather own an almond orchard than a wheat farm.

GLENN.

RAISING GOATS.—Willows Promoter: B. F. Foreman, one of Glenn county's prominent and substantial farmers and progressive stock raisers near Nowville, informs us that there is money in the goat industry and that he has over one thousand head. The fleece brings from 28 to 30 cents per pound, and the average is about three and one-half pounds to the shearing. They are much easier to raise than sheep.

KINGS.

CREAMERY OUTPUT.—Hanford Journal, Feb. 5: The Kings County Creamery, of which F. J. Peacock is the manager, Monday churned 700 pounds of butter. The output from now on will reach this point every day until the summer months, when it will be greatly increased. This creamery has now a skimming station at Dos Palos, Merced county, and receives a big supply of cream from there every day.

DAIRYING A GOOD BUSINESS.—Hanford Sentinel: Three years ago W. R. Wiles of this county, who, by the way, is a very industrious man, rented a half section of salt grass farming land 6 miles south of Hanford. The land is considered as "cheap" land—that is, not the best as compared with the fruit lands of the county. When Mr. Wiles went on to the place he was practically without means and had to work his way slowly along by degrees. He went to dairying with only a few cows. He and his family have lived well, enjoyed good health, and now, after three years, he has in his own right a herd of eighty-seven cows and cattle, thirteen head of horses, the necessary farming machinery to permit him to carry on the place, and he is out of debt. He sells the milk from the cows to the Hanford cheese factory, which last month paid him $1.20 per cwt.

MENDOCINO.

CONTRACTS FOR PEARS.—Santa Rosa Democrat, Feb. 10. At a meeting of the pear growers of Ukiah valley most of the growers decided to contract their pears. Accordingly arrangements have been made whereby the growers are to receive $20 per ton for all their crop that grades 2¼ or over for the next five years. The agreement is with the packing combine, Superintendent Van Alen of the Santa Rosa cannery being the contractor. The same growers sold their pears to the Santa Rosa cannery last year.

MONTEREY.

PIGEONS DESTROYING GRAIN.—Castroville Enterprise: Wild pigeons are raising havoc in this valley by following the seed sowers and devouring the seed nearly as soon as it reaches the ground. There is said to be millions of these feathery marauders, and some of the farmers have been driven to the extremity of hiring men with shot guns to kill or drive them away.

NAPA.

WALNUT TREES PROFITABLE.—Calistogan: Ira W. Adams of Calistoga has for the last twelve years been advocating the planting of walnut trees in this this county, and says: "I had one tree that bore 250 pounds the past season of as fine walnuts as I ever saw in this State. They brought me $25 here at 10 cents a pound. It is not too late for residents of Napa county who have plenty of broad acres adapted to walnut raising to start out in good earnest to raise this valuable, healthful and most nutritious nut."

RESISTANT VINES.—George Husmann in Napa Register: "Napa county was one of the first which imported Rupestris St. George from France, which now seems to take the lead among resistent stocks, so much so that about 600,000 cuttings were sold from here, with about 20,000 rooted vines, bringing quite a revenue for the propagators of this stock. Nor must we forget the Lenoir and other varieties of the Bourguinana class, introduced twenty years ago, and which are the foundation of many flourishing vineyards to-day. They have stood the tests of that time and furnish a striking contrast, with their deep green foliage, to the viniferas succumbing to the ravages of the insect."

ORANGE.

SUGAR BEETS.—Anaheim Gazette, Feb. 7: Senator Jones has begun the distribution of beet seed to farmers. A day or two ago he distributed 7000 pounds in one day, at Loara station. Seed is also being distributed at Buena Park, Compton, Florence, Norwalk and Long Beach. The Senator has accepted 3500 acres for beets in these several localities, and has applications on file for 1500 acres more. The rains have been of sufficient volume to warrant extensive seeding operations, and during the week thousands of acres have been planted. The Senator thinks that at least 2500 acres will be set to beets in the vicinity of Anaheim. The contract price this year is $4 25 for beets of 15% sugar, with freight paid to the factory by the sugar company. This is a substantial advance over the old rate of $3.50 for beets of 12%, with an addition of 25 cents for each per cent above that figure. Farmers will this year receive $4.25 for their beets of any saccharine content up to 15%, with an advance of 25 cents for each additional per cent over 15. It is estimated that from 10,000 to 12,000 acres of beets will be planted for the Los Alamitos factory. Seeding operations have already begun.

BRIGHT OUTLOOK.—Anaheim Gazette, Feb. 7: Considering that the October rains played no small part in the rainfall for the three past seasons, and rains in October are proverbially of little value, it will be apparent that the seasonal rains to date outmeasure the precipitation of the past three years combined. The appearance of the country indicates as much. Never were there such extensive plantings of barley, beets and other crops. Stretching from Anaheim to the ocean at Bolsa, the country seems to be one vast field of grain, and it is looking remarkably well. In the country towards Los Alamitos thousands of acres have been set to beets, and the La Habra valley is one vast grain field. The pasturage in the hills was never better. Abundant feed for stock was long since assured. On Jan. 31st the rainfall, according to the Southern Pacific gauge, amounted to 8.65 inches. The weather since then has been showery and considerable rain has fallen, amounting to 9.62 inches for the season to date.

PLACER.

MORE ORANGES.—Sacramento Bee: J. Parker Whitney is taking out the forty acres of peach trees at his place, known as The Palms, at Penryn, Placer county, and will at once supplant them with orange trees. In addition to that he will at once set out fifty acres more on the high ground to oranges.

RIVERSIDE.

A NEW NAVEL ORANGE.—J. E. Cutter, of Riverside, has a new development in navel oranges. He has growing upon an Australian tree against his residence a large navel limb or bud, and a large branch of the Parson Brown, a superior Florida seedling. In cutting an orange grown upon the Washington Navel branch it was found full of seeds, and a few of them were planted under the tree. From these seedling buds were cut and inserted in the large orchard tree near by, and one of the buds now forms a large portion of the tree, and it is full of navel oranges different from all other in appearance and quality. The originator of this new orange is not trying to foist it upon the public, neither has he any buds to give away, but is growing a crop of fruit each year and is testing its merits in a purely experimental way. The fruit is a decidedly pleasant modification of its parents in flavor, and may prove of permanent value as a contribution to the too few varieties of navel fruit.

SAN BERNARDINO.

HALF AN INCH OF RAIN IN FIFTEEN MINUTES.—Redlands Facts, Feb. 5: At 12:30 this afternoon there was a very heavy shower. The sky suddenly darkened, a brisk wind sprang up from the southeast, soon veering to the southwest, and the water came down in sheets. The heavy part of the shower lasted about fifteen minutes, but in that short time half an inch of water fell. It came in such large drops that the soil, which had been taking in the gentle rain as fast as it fell, was beaten down, and the most of the water ran off.

SAN DIEGO.

BIG YIELD OF LEMONS.—Escondido Advocate: From Jan. 1, 1900, to Jan. 1, 1901, over thirty-one tons of marketable lemons were picked from three acres of eight-year-old trees on the Fabry ranch, in the north end of the Escondido valley. This is an exceedingly fine showing after a succession of three dry seasons. It is over ten tons to the acre, and by the looks of the fruit on the trees, this year promises to surpass the above amount. This orchard contains ten acres, the balance of which is planted to fine Washington Navel oranges.

SAN LUIS OBISPO.

A CATTLE BATH HOUSE.—Arroyo Grande Herald: For several seasons past our cattle raisers along the coast have been losing much of their stock from the tick plague and they have sent samples to and sought aid from the professors at Berkeley. It was found that the mite that did the damage and caused the death of the stock is the little red tick from Texas and the professors soon found a dip that would squelch them. Acting on their advice a big bathing place will soon be erected, probably on the Biddle ranch. It will be a large pool filled with water strongly charged with certain chemicals. A driveway will lead to the pool ending in a draining place on the opposite side. The cattle affected will be driven into the pool, made to swim across and allowed to drain on the platform from which the chemically charged water drains back into the pool. The little red spiders fasten themselves on an animal and breed so rapidly that in a few weeks the poor beast is literally covered with them and has its life-blood slowly but surely sucked away.

SANTA CLARA.

BIG IRRIGATION SCHEME.—San Jose Herald, Feb. 8: One of the most important irrigation schemes ever undertaken in this valley will soon materialize at Saratoga. The waters of the Saratoga creek are to be divided from the Sorosis dam by the riparian owners on the stream below. A company will be formed in a few days and the method of distribution agreed upon. It is claimed by the promoters that it will be one of the finest systems ever undertaken in the State, and that it will cover over one thousand acres which have never before been irrigated or properly watered by the winter rains. Among the residents of the district interested in the project are Messrs. Johnson, Tantau, English, Di Fiore, Hersey and the Sorosis Co.

SANTA CRUZ.

CULTIVATING KALE.—Santa Cruz Sentinel: Charles Steinmetz received some kale seeds from England last spring and planted them in his garden on Ocean View avenue. The kale immediately sprouted and for six months the family has enjoyed the sprouts. At the present time the stalks have grown to a height of 11 feet and are still growing. The lady who furnished the seeds said that in England, after the stalks have grown for two years, they are often made into walking sticks.

SONOMA.

A BIG BROODER.—San Rosa Democrat: Roadmaster Will Rains of Rainsville has designed and built a large chicken brooder, which is considered one of the best ever put together. It is 60 feet long and 16 feet wide and will accommodate 1500 chickens. It is the intention to raise chickens on a wholesale plan with the new invention.

STANISLAUS.

TO PLANT FLAX FOR ITS FIBER.—Modesto Herald, Feb. 7: If the expectations of capitalists incorporated under the name of the Pacific Fiber Co. are realized, Turlock district will have a new and profitable industry in the production of flax, primarily for the fiber, which is used in the manufacture of fine linen and for other purposes. These expectations are based upon analyses of the soil. Practical experiment is to be made, however, through the cultivation of a tract of 110 acres of Mitchell estate land, 3 or 4 miles south and east of Turlock. The corporation have leased the land for the purpose and bonded one or two sections, purchase to be made if the experiment is successful. Men and teams are at work preparing the land for seeding. The seed is from Europe.

SUTTER.

GOOD PERCENTAGE OF LAMBS.—Sutter County Farmer: The increase in the flocks on the ranges has been large so far; and where the sheep have been well bred and taken care of, the majority of the ewes have given birth to twins. In one small band of thirty-eight ewes there were sixty-four lambs, with more to hear from, and all are doing well. One of the ewes has three lambs.

TULARE.

DIFFICULTIES OF WHEAT MEN.—Visalia Delta, Feb. 7: H. G. Johnston of Tulare reports that in the Lindsay country the rain has been so heavy and continuous of late that the farmers are unable to plow the ground to put in the usual crop of grain. The land when wet is boggy and too soft for horses to walk on and pull a plow. When it is dry it is hard as a brick, so it is extremely difficult for the elements to suit them.

THE CITRUS CROP.—Visalia Delta, Feb. 7: The citrus shipments from this county are not completed, but P. M. Baier says that 610 cars have already been distributed over the world from Tulare county this season.

YOLO.

A GOOD SHOWING.—Fruit shipments from Woodland during 1900 amounted to 101 cars green and 82 cars dried, or about 4,070,000 pounds. Local shipments and those in less than carload lots amounted to about half as much more. There were 164 cars of hay shipped, 163 cars of wheat and barley, 149 cars of stock, and 61 cars of wine.

YUBA.

PROFITABLE OLIVE CULTURE.—Marysville Appeal: The Colmena Olive Company is at present in a prosperous condition. The landed holdings of the company consist of 100 acres planted to Mission trees mostly and now nine years of age. After deducting for avenues, etc., the company has probably a net area in fruit of eighty-five acres. The present year, provided no ill fortune overtakes them, the company expects to raise for market about thirty-five tons of olives, about half of which will be pickled ripe and the balance utilized for oil making. The tonnage which will be devoted to pickling will produce, it is expected, upwards of 5000 gallons of first-class product. To properly prepare these olives the company will probably install its own pickling works, although the grade of fruit they produce should readily bring $60 per ton for pickling, should it be decided to sell elsewhere. The stock of the Colmena Olive Company is mostly held locally, Samuel Garber, R. G. Stanwood, F. H. Aaron and H. B. P. Carden being among those most heavily interested in the grove.

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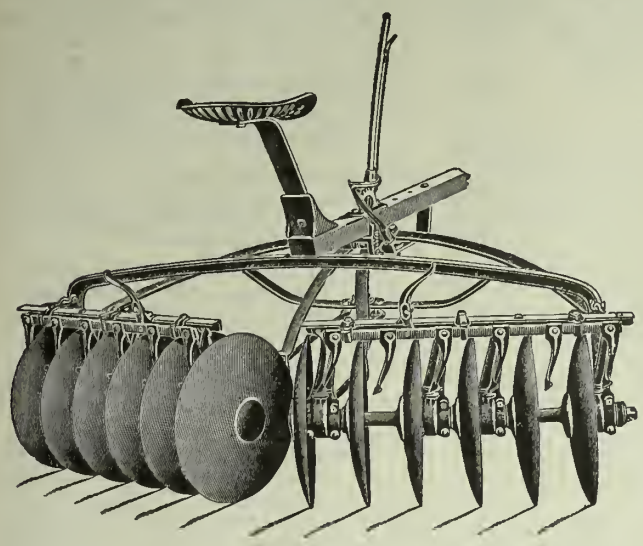

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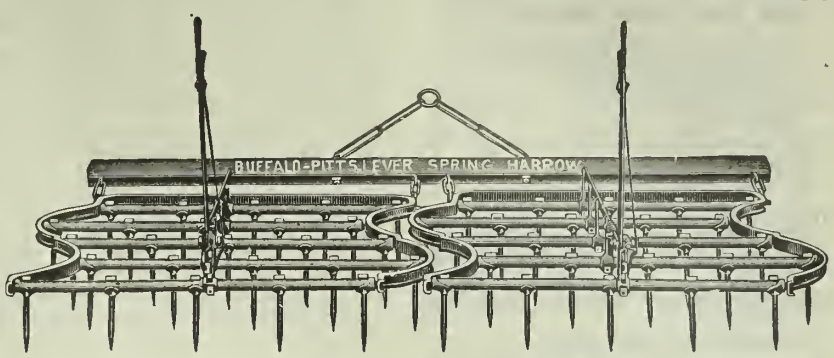

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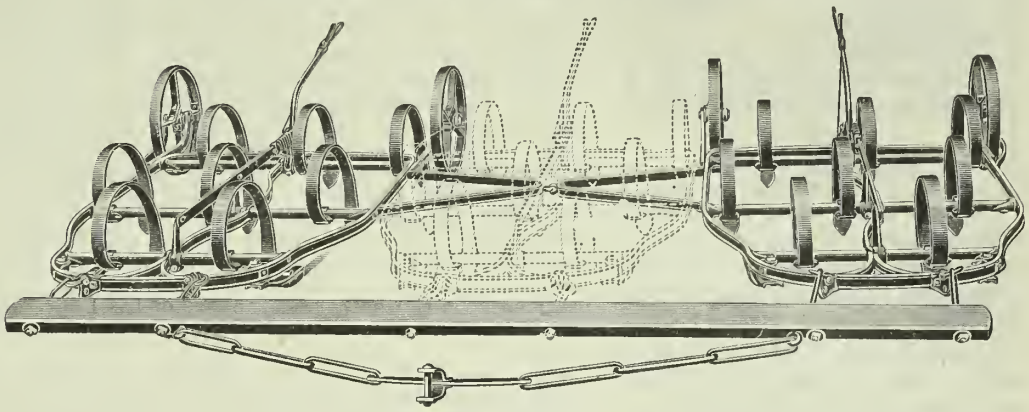
Have SPRINGS which allow the teeth to yield in meeting an obstruction. Frames will not "bark" the trees.



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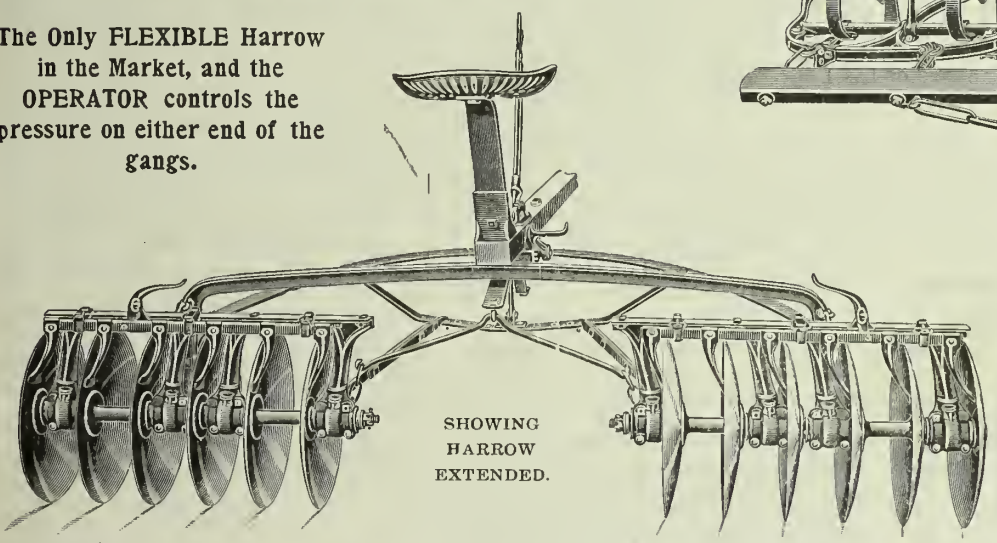

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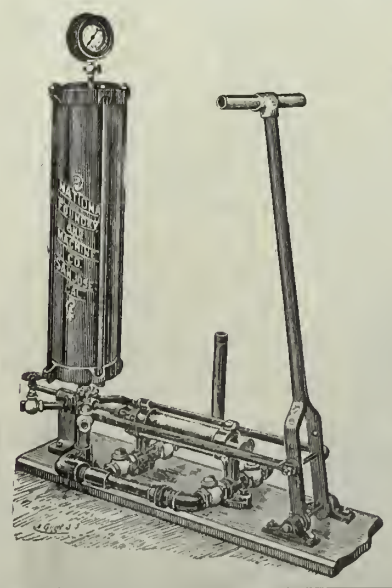

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THE HOME CIRCLE.

What Your Striving Does for Others.

If all the end of this continuous striving
Were simply to attain,
How poor would seem the planning and contriving,
The endless urging and the hurried driving,
Of body, heart and brain!

But ever, in the wake of true achieving,
There shines this glowing trail;
Some other soul will be spurred on, conceiving
New strength and hope, in its own power believing,
Because thou didst not fail.

Not thine alone the glory, nor the sorrow,
If thou dost miss the goal;
Undreamed of lives, in many a far to-morrow,
From thee their weakness or their force shall borrow—
On, on, ambitious soul!

—Ella Wheeler Wilcox in Feb. "Success."

The Making of Jones.

Perhaps Jones accepted life in too serious a spirit; perhaps he was over-sensitive and over modest; perhaps he attached an undue importance to certain emotions which in the breast of ordinary men are transitory, but certain it is that the days of his early manhood were deeply tinged with blue; that he fell backward in the fight for place, and permitted bitterness to enter his heart, although it passed not his lips, that he loved sincerely and with a constancy unwavering.

Those who knew Jones in the early days found in him a source of merriment. Poor chap! Every shaft of cheap village wit found him vulnerable, and when he struck back, which was not often, he did it with such gentleness and awkwardness that he appeared quite ridiculous. His love affair with Mary Brown furnished amusement for two summers and two winters. It was not much of a love affair. Beyond the fact that he was smitten by the girl's charms, which were many, both of mind and body, it was not outwardly a love affair at all.

There are reasons for thinking that had the girl not sickened he would have asked her to marry him, and would have been refused. But the sickness came while the words were yet unspoken, and one day he was missed. He had gone West, his mother said vaguely to those who inquired. She was afraid he would never return. He was a good boy, she added, her voice breaking slightly, but he had never seemed able to get along with the people. He was not understood. She had hoped to see him and Mary Brown married, but he had spoken to the doctor about it, and the doctor had discouraged him. It was not right, the doctor said, for folks with consumption to marry. She was glad he had not proposed to the girl; it would have made it so much more painful for the girl, poor dear!

More than one young man left the village that year to seek his fortune, as the saying is. It was like other villages—a place to be born in and to be reared in; that is all. It offered no encouragement to the ambitious. Occasionally one of its sons, battered and bruised by the outside world, came back, haltingly and tremblingly, to die; but few returned to live. Some of these young men went into the market places, some into the gold fields, some here and some there; but two of them enlisted in the service of their country. And it came to pass, not strangely at all, but naturally, that they met at an army post in the far West, and accosted each other fervently and with joyousness. One of them bore the red cross on his sleeve, and the other touched it lightly with his finger when the long handshake was over.

"How did you come to get into it, Jones?" he asked.

There was the slightest of unintentional emphasis upon the pronoun, and Jones' sensitive lips quivered for an instant.

"I don't really know," he replied; "it just happened so. When I left home seven years ago I went to work in a drug store at Davenport. It was not a very good job. The druggist laughed when I applied for it. He said he wanted a boy. Still, he would rather have a big chap like me if I would be satisfied with the pay. I didn't promise to be satisfied, but I took the place. I was tired of looking for work, and the little money I had was getting alarmingly less. That was the beginning. In two years by hard study I was a registered pharmacist and getting fair wages, but I wasn't happy. I don't suppose I'll ever be regularly happy, although I've been nearer that way since I got into this than I ever was before. I never knew before what it was to have any one's face light up with welcome when they saw me coming. I never knew before what it was to have my fellow men cling to me and depend on me, and it's sweet—sweet!"

He drew a long breath, as if inhaling a pleasant fragrance, and there was a far away look in his eyes, akin to rapture.

"I studied medicine after I received my degree in pharmacy," he wet on, suddenly recalling himself. "I covered the course in two years, and got my permit to practice; but somehow—the same old reason, I suppose—no one seemed to care whether I practised or not. For a few months I drifted around looking for a location. Of course I didn't find it. Young doctors have to push in these days, and I couldn't push. I wanted to settle down, but I couldn't settle in any place where the people weren't glad to see me. Finally chance took me in hand. I saw a placard at the door of a recruiting office, and I went in. It was a matter of sheer impulse. There were vacancies in the medical corps. My credentials were good. I enlisted."

"I am glad you are here, Jones," said the other, and he looked at the tall, sunbrowned surgeon admiringly. This was not the Jones of seven years ago. The old Jones had shown few qualities to inspire respect, and this was a man who had proved himself worthy of many things. He was not to be laughted at now.

"I am glad to have seen you," said Jones, "but I leave here to-night, while you"—he glanced significantly at the low buildings about the parade ground—"will probably remain for some time. I am off for special duty. I may return here and I may not. It makes little difference anyway. Since mother died I have nothing to—"

He turned away his head, and his shoulders shook. His mother had died in the first month of his absence. He had not learned of her death until his letter, written after securing work in the drug store, had been returned to him with the word "deceased" written appropriately in blue across its face. Presently he recovered himself.

"I may as well tell you where I am going," he said. "Possibly some of my old friends will inquire for me. You can tell them, if you wish, that there was a post in the South stricken by yellow fever, and that I went there—to do what I could—at my own request. I would rather do it than not. They will be so glad to see me, you known—those poor chaps from whom the others have run away. Ah, it is worth while to have some one glad to see you! You can't imagine what it means to a fellow like me, who was missed somehow when the qualities of personal charm were distributed. It is so glorious when one's motives are understood and appreciated!"

"I suppose it is," said the other. He was thinking of the time when this man was the butt of the village fun, and he was conscious of a feeling of shame for the part he had taken in the cruelty. "Jones," said he, extending his hand suddenly, "forgive me."

"Forgive you!" Jones was quite astonished.

"Yes, for—for not knowing you. You are worth in the sight of Heaven more than all the rest of us put together."

"Bosh!" said Jones. But his lips quivered again, and the clasp of his hand was exceedingly warm. "It is good of you to say so. It is very gratifying to me to have one of my old friends say that, even if it is not true. I am no more worthy than I was seven years ago."

It was not reproof, and yet it was. The other hung his head. "Don't let us talk of it, Jones," he said; "don't let us speak of those times."

"Very well," said Jones. And then, with a suggestion of hunger in his eyes, he said good-by.

Six months later the two men met again. Jones bore the appearance of one to whom physical rest has been long unknown, but there was a sparkle in his eyes that the other had never before seen there, and he carried his chin high, as one who is satisfied with himself. He greeted the other with something like effusiveness, and the other wondered, and said so frankly, whether he was in the habit of assuming a new character twice each year.

"God is very good," said Jones, in explanation of the lightness of his heart. "Those people down there were more glad to see me than I had expected. They actually showered me with blessings—regularly honest blessings that entered into myself and lifted me up. I shall never look upon yellow fever with horror again. I don't know when I have enjoyed myself as I have during the last six months. There would be little to dread—little of sorrow—in the world were it not for human ignorance. Possibly it is better so. Man would be a wild, dangerous sort of animal if his spirit were not subdued with occassional hot irons. The keenest delight known to us is that which comes with calamity unrealized. Yes, yes, it is well that we are ignorant."

"You are a philospher, Jones."

"Don't call an old friend names," said Jones gravely. "One day down there, word came from out in the country that a family—a whole family—was down with the fever. There was no one to give them care. The messenger, a negro boy, asked if we could not send some one to them, and it just happened that I was so situated that I could go. It was too good an opportunity to lose. I knew they would be glad to see me. It was worth the long ride under the broiling sun, and through the choking dust, to meet an honest, heart-felt, fervent welcome from some one's fellow creatures. It — was — worth — the — while — and — more."

"He repeated the words slowly, moistening his lips all the while, as one does when the memory of something pleasant lingers.

"It was well that I got there when I did. There were three in the family—a man, a woman and a daughter—a family that had come from the North for the sake of the mother's health. Their small plantation was practically isolated, and they had not feared the fever. They were quite unprepared for it. It is not necessary for me to tell you of the struggle we had; it is sufficient to say that they all lived. And one afternoon, when they were convalescent and I was able to remit the care, which, until that time, had been constant, I seated myself in a rocking-chair, with the family photograph album upon my lap. I did not remain seated long, for among the first portraits in the book was that of a girl—a girl who looked like one I had known—we had known—at home. I rose to my feet excitedly and carried the book to the woman, pointing with a finger that shook disgracefully to the portrait.

"'Who is it?' I asked.

"'My brother's daughter,' she cried.

"'And her name is—'

"'Mary Brown.'

"My legs went out from under me then, and my head buzzed. I was tired out, I suppose. I collapsed into a chair, and the woman in her weakness not noticing, went on talking as some women do.

"My maiden name was Brown,' she said. "I haven't seen my brother's folks for ten years or more, but we have never ceased to correspond. Poor Mary was sick a while ago. The doctors called it galloping consumption. But it wasn't. If it had been she'd have died. The doctors don't always know, begging your pardon, sir. 'Twas something else, like a decline, a kind of a pining away, that was a mystery. Her mother thinks now 'twas love for a young fellow—one of the harum-scarum sort—that lived in the village once. She thinks so because the girl got into a way after a while of talking in her sleep—repeating over and over the fellow's name, which was Jones. It seems that Jones was her whole life, and yet, after he'd flirted with her for a time, he went away, and has never been heard of since. He must have been a heartless scamp. Poor girl!'

"'And she isn't married yet?' I asked. My throat was so dry that I had to exert all my strength to make my voice audible.

"'No.'

"'And you think that, bad as he is and shameful as was his treatment of her, she'd be glad to see Jones?'

"'There's no doubt of it, poor girl.'

"I left the room then. I couldn't stand it any longer. I went and threw myself upon the ground, and sobbed and laughed and kicked up my heels like one who goes daft. She had spoken my name in her sleep! She wanted me! She would be glad to see me!

"The quarantine was raised four weeks later, and I went North. It was all true. She was glad to see me. She reproached me for going away from her, and I was sorry clear down to my feet. But after all—and there's comfort in it, as I told her—I'm more worth marrying now than I was then."

"You are going to remain in the service?" inquired the other.

"No, I'm going home to settle down at last—home—home!"

There was a rapt expression upon his worn face, and he raised his eyes reverently to the sky.

"Home," he repeated softly, "home—home!"

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The quickest relief, for a cold, is by Scott's emulsion of cod-liver oil.

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Fame.

Fame and Death, upon a day,
Met and chatted on the way.

"Greeting, friend," in kindest tones,
Murmured Death, with happy smile.
"Let us rest beside the way,
Need we hurry all the while?"

"I must hurry," answered Fame;
"Further down the way I haste,
One abides there whom I must
Bid my sweetest fruits to taste."

"Rest you, rest you, brother mine,"
Death insisted, graciously,
"But an hour ago that one
Answered to a call from me."

Fame and Death, upon a day,
Met and chatted on the way.

—Baltimore American.

Don't Eat When Overtired.

There is, perhaps, no more frequent cause of trouble among workers than that of eating when overtired. They return in the evening from their labor exhausted, and flatter themselves that a good meal will set them up again. Their hopes are seldom realized, for their stomachs, like the rest of their bodies, being thoroughly tired, cannot do their work effectually, and the result of giving them a solid meal to tackle is an attack of indigestion. Of course, when one comes in from the day's work, a meal is necessary; the only thing to guard against is taking it when one is too fatigued to digest it. If, instead of sitting down as soon as possible after entering the house to dinner or supper, the weary worker were first to take a cup of beef tea, or even of weak tea, with a little piece of bread and butter, which would act as a stimulant, she would, by the time she had made her toilet for the evening, be sufficiently rested and refreshed to eat a hearty meal with benefit. And right here comes a word as to the importance of dressing for the evening. It is not merely a habit of refinement, but it helps one to overcome fatigue, to get rid of the dust of the day and to put on fresh, cool garments, instead of those one has worn since morning. The donning of some sort of evening dress—be it only a well worn silk blouse—has a toilet effect on both mind and body, and should by no means be omitted, even by the weary business woman living alone in a boarding house.—Chicago News.

Home Folks Preferred.

Small Margaret had said her prayers and her mamma was tucking her in to leave her to slumbers, when the child begged that mamma would not leave her alone. "Why, Margaret," said mamma, soothingly, but surprised at this unexpected demand, "you know you are never alone, for God is always with you." "Yes," rejoined the small maiden, doubtfully, "I know. But, mamma, I'd rather have some of my own relations."—Woman's Home Companion.

THE continual breaking of lamp-chimneys costs a good deal in the course of a year.

Get Macbeth's "pearl top" or "pearl glass." You will have no more trouble with breaking from heat. You will have clear glass instead of misty; fine instead of rough; right shape instead of wrong; and uniform, one the same as another.

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Ten Uses of Lemons.

Lemon juice removes stains from the hands.

A dash of lemon in plain water is an excellent tooth wash. It not only removes tartar, but sweetness the breath.

Two or three slices of lemon in a cup of strong tea will cure a nervous headache.

Lemon juice (outward application) will allay the irritation caused by the bites of gnats and flies.

No family should be without lemons. Their uses are almost too many for enumeration.

Lemon peel (and also orange) should be all saved and dried. They are a capital substitute for kindling wood. A handful will revive a dying fire.

The juice of a lemon, taken in hot water on wakening in the morning, is an excellent liver corrective, and for stout women is better than any anti-fat medicine ever invented.

Glycerine and lemon juice, half and half, on a bit of absorbent cotton, is the best thing in the world wherewith to moisten the lips and tongue of a fever-parched patient.

The finest of manicure acids is made by putting a teaspoonful of lemon juice in a cupful of warm water. This removes most stains from the fingers and nails, and loosens the cuticle more satisfactorily than can be done by the use of a sharp instrument.

Lemon juice and salt will remove rust stains from linen without injury to the fabric. Wet the stains with the mixture and put the article in the sun. Two or three applications may be necessary if the stain is of long standing, but the remedy never fails.

A Real Napoleon on Tailor's Bench.

To what base uses we may return, Horatio! Think of a beggar eating of a fish, that fed on a worm, that dined on the body of a king! Almost as bad, think of the Third Napoleon in direct descent from the Great Napoleon, sitting cross-legged on a tailor's bench sewing pants for a living! When he hears of this the blue blood of every American who is the descendant of a chaplain to a duke, or an hostler to a count, will heat with indignation. Verily, the cause is sufficient.

This Napoleon, the tailor, does business at Chemnitz, Germany. He is an indifferent tailor and no one who cares to have good sewing intrusts his work to him. He has languished in obscurity because it was thought he was an impostor, but his claims have finally been so well established that Baron Legoux, chairman of the French Imperial party, is preparing a home in Paris for him and raising a fund of a million francs on the interest of which he will hereafter live in a little palace on the Champs Elysee.

Humorous.

The only certain road to wealth—
A test will prove it so—
Is holding on to money when
You feel like letting go.
—Chicago Record.

"It's funny that you should be so tall. Your brother, the artist, is short, isn't he?" He (absently): "Yes, usually."—Brooklyn Life.

"Is your daughter learning to play the piano by note?" "Certainly not," answered Mrs. Cumrox, severely. "We always pay cash.—Washington Star.

Young Mother: "Baby is somewhat cross to-day. He is teething." Bachelor (in great awe of the mite of humanity): "And when do you expect him to commence—er—hairing?"—Punch.

"How do you buy your apples—by the barrel?" "That's the way I try to buy them, but when I get them home I generally find I have bought them by the top layer."—Chicago Tribune.

Good man (sadly): "Ah, my son, you have been to the circus; it pains me greatly that one so young should have crossed the threshold of iniquity." Bad Boy: "But I didn't cross no threshold; I crawled in under the tent."—Gaiety.

Domestic Hints.

BAKING POWDER BISCUITS.—Delicious baking powder biscuits are made as follows: Sift together two cupfuls of sifted flour, one level teaspoonful of salt and two level teaspoonfuls of baking powder; rub into the mixture two level tablespoonfuls of butter or lard: stir in two-thirds of a cupful of milk. Turn on to a floured board and roll lightly into a sheet one-half inch thick. Cut out with a round cutter and roll each into an oblong shape, brush with melted butter and fold, pinching the edges together. Place in a pan, leaving a space between, and allow them to stand for twenty minutes. Then brush with milk in which a little sugar has been dissolved and bake in a hot oven.

CRANBERRY SAUCE.—Put three pints of washed cranberries in a granite stew pan having a tight cover. On top of them put three cups of granulated sugar and three gills of water. Cover, and after they begin to boil cook them ten minutes closely covered and do not stir them. If they are inclined to boil over, draw the pan back a little or lift the cover for an instant and press the fruit down under the syrup. The skins will be soft and tender and the berries will not lose their shape if they are not stirred. When cool the whole mass will be jellied slightly. A convenient way to remember these proportions is by this formula: Half as much sugar as fruit and half as much water as sugar.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 13, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	Feb.	May
Wednesday	—@—	79⅛@79⅛
Thursday	—@—	79⅛@80
Friday	—@—	79 @79⅛
Saturday	—@—	79⅛@79⅛
Monday	—@—	79¼@80⅛
Tuesday	*—@ —	—@—

*Holiday.

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	5s 11¾d	6s 0⅛d
Thursday	6s 0⅛d	6s 0⅛d
Friday	5s 11¼d	6s 0 d
Saturday	5s 11⅛d	5s 11¾d
Monday	5s 11¼d	5s 11¾d
Tuesday	5s 11¼d	5s 11⅞d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 03⅛@1 02⅞	1 07 @1 06⅞
Friday	1 02⅝@1 01⅞	1 06⅛@1 06
Saturday	1 01⅝@1 01¼	1 05⅝@1 05⅜
Monday	1 01¼@1 00⅞	1 05¼@1 05⅛
Tuesday	1 01 @——	1 05⅛@——
Wednesday	1 01 @1 00⅝	1 05⅛@1 04¾

WHEAT.

Dullness and weakness have been pronounced features of the wheat market most of the time since last review, and prospects at the moment are certainly not encouraging for the development of any radical change for the better very soon. With European markets stocked ahead of immediate requirements; with large quantities of wheat still on hand in this State and in Oregon and Washington; with the outlook for the coming crop in California as good as it is possible to have it at this date; and with tax time almost here, it would be surprising to have the wheat market in other than a weak and dull state. There has been considerable wheat forwarded lately from this port to west coast of South America, mainly high grade, to be used for seeding and for mixing with the common wheat of that section. The export movement other than the above has been of rather light proportions, and is of much smaller volume than a year ago, when shipments to Europe were averaging a cargo per day. Ocean freight rates are about the same as a year ago, but the supply of ships is lighter, both in harbor and to arrive. The total registered tonnage of vessels here and reported on the way is 181,000 tons, against 226,000 tons a year ago, the carrying capacity of the latter being 70,000 tons in excess of the former. The visible supply of wheat in the United States east of the Rockies was reported at 58,494,000 bushels, showing a decrease for the week of 1,273,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.03⅛@1.00⅝.

December, 1901, delivery, $1.07@1.04¾.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.01 @ 1.00⅝; December, 1901, $1.05⅛ @ 1.04¾.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	96¼@	98¾
Oregon Valley	97½@1 00	
Washington Blue Stem	1 00	@1 02½
Washington Club	97½@1 02½	
Off qualities wheat	92½@	95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s3d@6s3½d	6s2½d@6s3d
Freight rates	37@38¾s	37½@38¾s
Local market	$0 98¾@1 01¼	$0 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Market presents an easy tone, but there are no changes to record in quotable rates. Shipments of fair volume and above the average continue to be made to South American ports, as for some weeks past, but the movement of flour from this port to Asia is not heavy, as compared with previous records.

Superfine, lower grades	$2 25@2	40
Superfine, good to choice	2 50@2	75
Country grades, extras	3 00@3	25
Choice and extra choice	3 25@3	50
Fancy brands, jobbing	3 50@3	65
Oregon, Bakers' extra	2 75@3	15
Washington, Bakers' extra	2 75@3	25

BARLEY.

Values have been tolerably well maintained for high-grade barley, or for qualities desirable for shipment, the quotable range remaining about the same as last noted, but for ordinary feed descriptions the market lacked firmness. Despite the fact that barley is the cheapest cereal on the list, and is being used quite extensively for feed, the supply thus far this season has proven in excess of requirements. Considerable barley is run through screening machines at Port Costa, and the refuse is landed on this market at low figures, satisfying a large portion of the local demand for cheap feed. Trading in futures on Call Board was light, and the trend of the speculative market was in favor of buyers.

Feed, No. 1 to choice	75	@ —
Feed, fair to good	70	@ 72½
Brewing, No. 1 to choice	80	@ 85
Chevalier, No. 1 to choice	97½@1	02½
Chevalier, No. 2	85	@ 90
Chevalier, poor	70	@ 75

OATS.

Owing to quite limited spot supplies, and nothing to warrant anticipating any material increase in offerings during balance of the season, the market shows decided strength. Stocks are principally Red and Black oats. Whites are offered very sparingly and Grays are hardly quotable. Surprise oats are virtually out of market.

White Oats, fancy feed	1 45	@1 50
White, good to choice	1 32½@1	40
White, poor to fair	1 20	@1 27½
Gray, common to choice	1 20	@1 37½
Milling	1 45	@1 50
Surprise, good to choice	1 45	@1 55
Black Russian	1 15	@1 35
Red	1 20	@1 45

CORN.

Trading in this cereal is not brisk, the lack of activity being as much or more due to limited offerings than to any other cause. There is some damp and defective corn offering, for which the market shows weakness, but values for choice qualities are being fairly well sustained.

Large White, good to choice	1 15	@1 17½
Large Yellow	1 15	@1 17½
Small Yellow	1 50	@——
Eastern, in bulk (carload lots)	1 08	@1 10

RYE.

Market is slow and weak, there being very little inquiry at present, either on local account or for shipment.

Good to choice, new	82½@	85

BUCKWHEAT.

The very limited spot supplies are in few hands, and are not being urged to sale. Quotable values are without change.

Good to choice	2 00	@2 10

BEANS.

White beans of all descriptions continue in light stock, and prices asked remain on much the same high plane as previously noted, but buyers naturally do not take kindly to the figures now current. It is probable that had it not been for purchasing on Government account, values would not have touched present levels. No favorable market for buyers need be looked for, however, during the balance of the current season. Colored beans are in fair supply, more especially Pinks and Bayos, and these are offering at comparatively easy rates, with only moderate trading in same.

Pea, fair to good, 100 lbs	——	@——
Small White, good to choice	4 75	@4 90
Lady Washington	4 10	@4 25
Butter	4 25	@4 50
Pinks	2 15	@2 30
Bayos, good to choice	2 65	@2 75
Reds	3 00	@3 25
Red Kidney	4 00	@4 25
Limas, good to choice	5 65	@5 75
Black-eye Beans	2 75	@3 00
Horse Beans	1 75	@2 00
Garbanzos, large	2 00	@2 25
Garbanzos, small	1 25	@1 75

DRIED PEAS.

Market is quiet, with spot stocks of Green light and few offering to arrive. Niles Peas are almost wholly neglected, and values for same are poorly defined.

Green Peas, California	2 75	@2 85
Niles Peas	2 00	@2 10

WOOL.

The market shows the same inactive state as for some time past, with quotations unchanged, but largely nominal, and more in accord with the views of holders than with buyers' ideas of values. That there will be much doing during the next month or six weeks, or until spring clip begins to arrive in noteworthy quantity, is altogether improbable. It is generally believed, however, that manufacturers and dealers will be anxious to secure selections of the coming clip, the quality promising to be more than ordinarily good.

SPRING.

Humboldt and Mendocino	16	@17
Northern, free	14	@15
Northern, defective	12	@13
Middle Counties, free	14	@15
Middle Counties, defective	11	@13
Southern, 12 mos	8	@10
Southern, free, 7 mos	9	@11
Southern, defective, 7 mos	8	@ 9
Oregon Valley, fine	17	@18
Oregon Valley, coarse to medium	16	@17
Eastern Oregon, choice	13	@15
Eastern Oregon, fair to good	10	@12
Nevada, as to condition	11	@15

FALL.

Humboldt and Mendocino	11	@13
Middle County	9	@10
San Joaquin	7	@ 9
San Joaquin Lambs	8	@ 9

HOPS.

Business in this line is at present confined almost wholly to small transfers from jobbers. There are few hops remaining in the hands of growers on this coast, and practically none which can be termed choice to select. Wholesale values are necessarily largely nominal, in consequence of the prevailing inactivity.

Good to choice 1900 crop	13½@16	

HAY AND STRAW.

There was a moderate amount of business in hay, but offerings proved ample for the demand, and for other than most select Wheat hay, or fancy Wheat and Oat hay mixed, the market lacked firmness. Best qualities did not command any better figures than had been current for some weeks preceding.

Wheat	8 00@12	50
Wheat and Oat	8 00@11	50
Oat	7 00@11	50
Barley	6 00@ 9	50
Volunteer	5 00@ 7	00
Alfalfa	8 00@ 9	50
Stock	5 00@ 7	00
Compressed	8 00@13	00
Straw, ₱ bale	40@	47½

MILLSTUFFS.

Bran was in fair supply, but with the bulk of stocks in few hands, and considerable demand for the Hawaiian Islands, in addition to local trade of good average volume, current values were well maintained. Middlings were held about as last quoted; there was no heavy quantity offering, neither was there much inquiry. Rolled Barley market was barely steady. Milled Corn commanded as a rule full current figures.

Bran, ₱ ton	16 00@17	00
Middlings	17 00@19	00
Shorts, Oregon	16 00@17	50
Barley, Rolled	16 00@16	50
Cornmeal	25 50@	——
Cracked Corn	26 50@	——

SEEDS.

There is not much doing in the kinds quoted herewith, and seldom is at this time of year. Mustard seed is in too scanty supply to admit of quotations. Alfalfa seed is offering in moderate quantity at quotably unchanged rates. Supplies of Bird seed are of fair volume, prices for same remaining practically as last noted.

	Per ctl.
Mustard, Trieste	—@—
Mustard, Yellow	—@—
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

HIDES, PELTS AND TALLOW.

While Hides show no quotable advance, there is a very fair demand at prevailing figures. Pelt market is quiet but steady. Tallow is meeting with tolerably prompt customs at figures quoted.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	9	7
Light Steers, under 48 lbs	8	7
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	7
Wet Salted Kip	9	8
Wet Salted Veal	9	8
Wet Salted Calf	10	9
Dry Hides	15½	13½
Dry Kip and Veal, 11 to 16 lbs	15	12
Dry Calf, under 4 lbs	16 @	14
Salted Horse Hides, large	2 50 @	—
Salted Horse Hides medium	2 00 @	—
Salted Horse Hides, small	1 00 @	—
Dry Horse Hides, large	1 75 @	—
Dry Horse Hides, small	1 00 @	1 50
Dry Colts' Hides	50 @	—
Pelts, long wool, ₱ skin	75 @	1 00
Pelts, medium, ₱ skin	60 @	75
Pelts, short wool, ₱ skin	30 @	50
Pelts, shearling, ₱ skin	10 @	25
Deer Skins, best summer	35 @	—
Deer Skins, good medium	— @	30
Deer Skins, thin winter	— @	10
Elk Hides	10 @	12
Tallow, good quality	4 @	4¼
Tallow, No. 2	3½@	3¾
Goat Skins, perfect	30 @	37½
Goat Skins, damaged	10 @	20
Kid Skins	5 @	10

HONEY.

There are no heavy stocks, but there is much more offering than can be accommodated with immediate custom at the values which have been lately current, or more properly speaking, at the figures generally asked. Stocks are principally amber grades.

Extracted, White Liquid	7	@ 7½
Extracted, Light Amber	6	@ 6½
Extracted, Amber	5	@ 5½
White Comb, 1 lb frames	13	@14
Amber Comb	11½@12½	
Dark Comb	8	@ 9

BEESWAX.

Market is decidedly firm, with stocks of light volume, both in this center and at interior points.

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

Beef continues in light receipt and prices are being well maintained at last quoted range. Mutton is in relatively lighter supply than Beef, and is being favored with a firm market. Veal of desirable quality is selling to advantage. Lamb is bringing good prices. Hog market shows decided firmness, receipts being of very moderate volume.

Beef, first quality, dressed, net ₱ lb	7¾@	8
Beef, second quality	7½@	7¾
Beef, third quality	6½@	7½
Mutton—ewes, 9@9½c; wethers	10	@—
Hogs, hard grain fed, medium	6½@	6¼
Hogs, small, fat	6⅝@	6¾
Hogs, large, hard	5¾@	5⅞
Hogs, feeders	5¾@	5½
Hogs, country dressed	7½@	8
Veal, small, ₱ lb	6	@ 9
Veal, large, ₱ lb	7	@ 8½
Lamb, yearlings, ₱ lb	11	@—
Lamb, spring, ₱ lb	12½@15	

POULTRY.

The market presented a little better tone than for a week or two preceding. Arrivals of Eastern poultry were on the decrease, and no heavy quantities of California poultry were received. While market for all descriptions showed some improvement, the firmness was most pronounced for choice young stock, Chinese making active inquiry for this sort on account of their New Year.

Turkeys, live hens, ₱ lb	12	@ 13
Turkeys, live gobblers, ₱ lb	11	@ 12
Turkeys, Dressed, per lb	14	@ 16
Hens, California, ₱ dozen	3 50	@4 50
Roosters, old	3 50	@4 00
Roosters, young (full-grown)	5 00	@6 00
Fryers	5 50	@5 50
Broilers, large	5 00	@5 50
Broilers, small	3 50	@4 50
Ducks, old, ₱ dozen	3 50	@4 50
Ducks, young, ₱ dozen	6 00	@7 50
Geese, ₱ pair	1 50	@2 00
Goslings, ₱ pair	2 50	@2 75
Pigeons, old, ₱ dozen	1 00	@1 25
Pigeons, young	2 50	@2 75

BUTTER.

Values for fresh butter were maintained at same range last quoted, with market moderately firm for best qualities, choice to select being given little or no opportunity to accumulate. Off qualities are not in as heavy stock as a few weeks ago, but there is enough to satisfy the demand for this description.

Creamery, extras, ₱ lb	21	@—
Creamery, firsts	19	@—
Creamery, seconds	18	@—
Dairy, select	19	@—
Dairy, firsts	15	@17
Dairy, seconds	14	@—
Dairy, soft and weedy	—	@—
Mixed store	10	@11
Creamery in tubs	17	@19
Pickled Roll	18	@19
Firkin, California, choice to select	17	@19
Firkin, common to fair	16	@17

CHEESE.

Prices are inclining downwards, quotations showing a reduction. Spot stocks are of only moderate volume, but buyers are operating very slowly and receivers are endeavoring to avoid accumulations.

California, fancy flat, new	10	@—
California, good to choice	9½@10	
California, fair to good	9	@ 9½
California Cheddar	—	@—
California, "Young Americas"	9½@10	

EGGS.

Further declines have been experienced. Receipts were quite liberal, and there was a general desire to keep stocks moving, no one wishing to carry any great quantity at prevailing figures, being satisfied that prices must soon go still lower. At the reduced rates, shipping orders of fair magnitude were received from Northern coast and Territorial points.

California, select, large, white and fresh.	18	@19
California, select, irregular color & size.	17	@18
California, good to choice store	16½@17½	
Eastern, as to section and grading	—	@—
Eastern, cold storage	—	@—

VEGETABLES.

Onions sold at an advance, offerings being very light, and prices are not apt to incline materially in favor of buyers for some weeks to come. Winter vegetables of all kinds were in limited supply, and it was the exception where full current figures were not realized, the market showing firmness. Fresh vegetables arrived

very sparingly and desirable qualities brought fancy figures.

Asparagus, ℔ lb	25	@	40
Beans, String, ℔ lb	15	@	20
Cabbage, choice garden, ℔ 100 lbs	1 00	@	1 25
Cauliflower, ℔ dozen	50	@	—
Egg Plant, ℔ lb	17½	@	20
Garlic, ℔ lb	3	@	4
Onions, Yellow Danver, ℔ cental	2 00	@	2 25
Peas, Sweet, garden, ℔ lb	6	@	8
Peppers, Green Chile, ℔ lb	30	@	35
Squash Summer, ℔ box	2 00	@	2 50
Squash and Pumpkin, ℔ ton	15 00	@	20 00
Tomatoes, ℔ crate	75	@	1 50

POTATOES.

Choice to select qualities of Burbank Seedlings were in limited stock and market for this sort tended against buyers, but the more common kinds were in ample supply and moved slowly at fully as low figures as had been ruling. There was a fair demand for seed potatoes, Oregon stock receiving the preference. For seed purposes, Oregon Peerless brought tolerably stiff figures, being in light supply. Sweets did not arrive in heavy quantity, but there were enough for the demand, which was not brisk.

Burbanks, River, ℔ cental	30	@	60
Burbanks, Petaluma-Tomales, ℔ ctl.	35	@	60
Burbanks, Salinas, ℔ cental	75	@	1 10
Burbanks, Oregon, lb cental	55	@	90
Garnet Chile, ℔ cental	65	@	80
Peerless, ℔ cental	65	@	1 00
Sweet Potatoes, Yellow, ℔ cental	90	@	1 05

The Fruit Market.

FRESH FRUITS.

Market is lightly stocked with Apples, the only deciduous fruit offering at present in fresh state in quotable quantity. Fine table Apples, especially select Red varieties, are particularly scarce and are commanding in a small way fancy prices, up to $2 per box and even higher figures being realized for strictly fancy. Common qualities are selling about as low as previously noted, moving slowly at these figures, despite the fact that there are not many offering, even of most ordinary descriptions.

Apples, fancy, 4-tier box	1 50	@	2 00
Apples, good to choice, ℔ 50-lb box.	75	@	1 00
Apples, common to fair, ℔ 50-lb box.	35	@	65

DRIED FRUITS.

The market for cured and evaporated fruits remained in all essential respects the same as noted in preceding review, being exceedingly quiet throughout, and lacking in firmness. In quotable rates there are no material changes to record the current week, but values for most kinds are poorly defined, and under selling pressure it would be the exception where figures quoted could be realized. On orders received by jobbers, small lots of dried fruit, mainly assorted, are going outward by rail and water. The filling of these orders is mainly out of supplies in second hands, and the reduction thus effected in stocks is not of sufficient magnitude to cause any special anxiety or desire on the part of wholesale handlers to replenish their holdings to any noteworthy degree. This slow movement is, of course, better than a dead market. No very great amount of activity would be necessary to impart a firmer tone, and the increase in movement sufficient to bring about the above result may be experienced at an early day. The prospects for any very marked improvement being realized, however, are not encouraging, the season being far advanced, and the immediate outlook good for a liberal yield of fruit in this State the coming summer. Non-association Prunes are still offering, mainly at 2¼@2½c for the four sizes, but the quantity outside of Association control is now small, and bids fair to be soon wholly exhausted.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½	@	6
Apricots, Royal, choice, in sacks, ℔ lb	6½	@	7
Apricots, Royal, fancy	8	@	9
Apricots, Moorpark	9½	@	11
Apples, in 50-lb boxes, rings, pressed, fancy	4½	@	5
Apples, 50-lb boxes, rings, pressed, good to choice	3	@	4
Figs, White, fancy pressed	6	@	7
Nectarines, ℔ lb	4	@	6
Peaches, unpeeled, fancy	5½	@	6
Peaches, unpeeled, choice	4	@	4½
Peaches, peeled, in boxes	11	@	14
Pears, unpeeled Bartletts, halved, fancy.	5	@	6
Pears, halved, unpeeled Bartletts	3	@	4
Pears, quartered, unpeeled Bartletts	3	@	4
Plums, Black, pitted	4	@	5
Plums, White and Red	5	@	6
Prunes, Silver	4½	@	6

COMMON SUN-DRIED.

Apricots	4	@	5
Apples, sliced	2	@	2½
Apples, quartered	2	@	3
Figs, Black	1½	@	2½
Figs, White	2½	@	3½
Peaches, unpeeled	3	@	5

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

Business doing in raisins is of light volume and is mostly in Pacifics or second grade loose Muscatel and in seeded raisins, these at current rates affording the best values for buyers. The official prices of the Association are unchanged, and there are practically no stocks at present outside of the Association lines.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@	—
Dehesa Clusters, 5-crown	2 50	@	—
Fancy Clusters, 4-crown	2 00	@	—
London Layers, 3-crown, ℔ box	1 60	@	—
do do 2-crown, ℔ box	1 50	@	—
(Usual advance for fractions.)			
Loose Muscatel, 4-crown standard, ℔ lb		—	@ 7
Loose Muscatel, 3-crown		—	@ 6½
Loose Muscatel, 2-crown standard		—	@ 6
Loose Muscatel, seedless		—	@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Offerings of Oranges, both by auction and private sale, were lighter than for several weeks preceding, in consequence of which the market showed a little better tone, but the quotable range was without appreciable improvement, and for other than choice to select stock the demand was slow, even at low figures. Lemons were in more than ample stock for current needs, although the demand was slightly better on account of the light stocks of Limes. Prices for Lemons were unchanged. Lime market was firm and quotations were again advanced.

Oranges—Navel, ℔ box	1 00	@	2 25
Seedlings, ℔ box	75	@	1 25
Tangerines, ℔ half box	1 50	@	2 25
Grape Fruit, ℔ box	1 00	@	2 00
Lemons—California, select, ℔ box	2 00	@	—
California, good to choice	1 50	@	1 75
California, common to fair	75	@	1 25
Limes—Mexican, ℔ box	5 50	@	6 00
California, small box	50	@	1 00

NUTS.

Beyond a light jobbing trade, there is no business to record. Transfers effected are at generally unchanged values. Although offerings of both Almonds and Walnuts are rather light, the market does not display any noteworthy firmness.

California Almonds, shelled	22	@	25
California Almonds, paper shell, ℔ lb	12	@	13
California Almonds, soft shell	9	@	11
California Almonds, hard shell	6	@	7
Walnuts, White, soft shell	7½	@	9½
Walnuts, White, California, standard	7	@	9
Peanuts, California, fair to prime	4½	@	5½
Peanuts, Eastern, hand-picked	5½	@	6
Pine Nuts	5	@	6

WINE.

There is a very firm tone to the wine market, particularly as regards all blended stock and all wines in second hands. Dry wines of last year's vintage are now quotable at 19@22c. per gallon, and no heavy quantities offering at this range. Competition among buyers has been reduced to a minimum, however, on account of all the large handlers being now in the Wine Dealers' Association. A contemporary says: "The California Wine Association has made an advance of 2½c. in the price of ordinary clarets, in addition to the 4c. raise made a short time ago. The price now is 25½c. per gallon for naked common wine f. o. b. in San Francisco, or 30c. with cooperage. The stock in first hands is low and a strong demand prevails, so there is little chance of any reduction in price and a large probability of a further advance." Considering the limited quantities offering, there is a fair movement outward, both by sea and rail.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING JAN. 29, 1901.

666,996. — TOE CLIP — A. M. Baldwin, Santa Cruz, Cal.
666,793.—WHEELBARROW AND SLED—C. C. Benson, San Diego, Cal.
666,640.—HORSE COLLAR—C. A. Blom, Orangeville, Cal.
666,999.—TEACHING ARITHMETIC—Borden & Wallace, Minturn, Cal.
666,734. — FREIGHT CAR — Campbell & Humphrey, Pendleton, Or.
667,003.—BUCKLE—A. J. Davidson, Douglas City, Cal.
667,145.—REMOVING CAPS FROM CANS—J. W. Fuller, Portland, Or.
666,752.—TONGS—A. J. Gustaveson, Tacoma, Wash.
666,869. — COUNTERBALANCE — F. H. Jackson, S. F.
667,017.—CURRENT MOTOR — C. Jasper, Spokane, Wash.
667,018.—SCALE DIAL — F. L. Kellogg, Santa Barbara, Cal.
666,932.—BOTTLE—E. Krahenbuhl, San Rafael, Cal.
668,098.—CARBON SHEET HOLDER—L. F. Miller, S. F.
667,032.—STEAM TRAP—W. D. O'Connor, Arlington, Wash.
666,818.—DRILL—J. H. Redfield, Bossburg, Or.
666,918.—WEIGHING MACHINE — H. B. Ruggles, Redlands, Cal.
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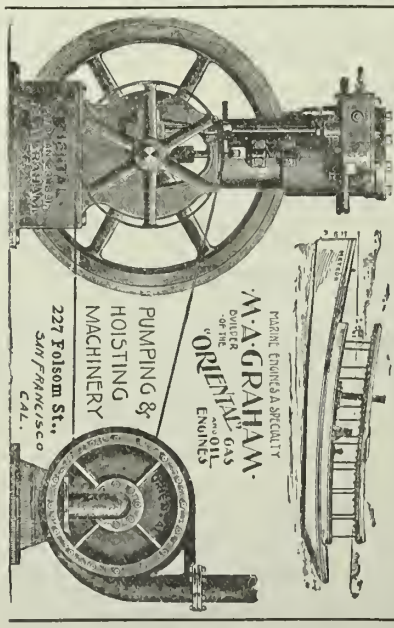

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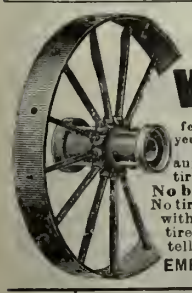

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THE GARDEN.

Questions Answered.

To the Editor:—Since writing my short article, "An Early Garden," which appeared in the Pacific Rural Press of February 2, I have received a short note from a lady, asking me the following questions. "How do you plant peas? I mean in rows or hills, and how thick and deep? What is the best variety, and when do you plant them? I want to plant so that when one kind is gone, others will be coming on. Also please tell me what kind of lettuce you consider best. Is it the proper way to sow thick and transplant, or thin out, and let the rest stand where it grew?"

Peas.—As the lady above referred to is a Pacific Rural Press reader, I will answer her questions through its columns, as, perhaps, others may be interested in my article. I always plant the dwarf varieties of peas in rows, about sixteen inches apart, barely wide enough to cultivate with a horse. The larger varieties in rows 3 feet or more apart, and 4 feet is none too much if they are to be "bushed," and even then, the vines will entirely occupy the ground by the time the peas are fit to pick. The Italians here plant all their peas in hills, about 20 inches apart, putting eight or ten peas in a hill, but I am fully satisfied the row system is much the best. For a small sowing I open a trench about 2 inches deep and 6 inches wide and sow the peas (dwarf varieties) so they are not over three-quarters of an inch apart; the larger varieties not quite as thick. Later in the season plant them 3 or 4 inches deep.

The Best Dwarf Varieties.—I came to the conclusion many years ago, that there is, in fact, no best variety. One Eastern seedsman quotes fifty-one different kinds in his catalogue this season. I find that the majority of the seedsmen put their own name to the variety they consider better than all others. In my article for the Pacific Rural Press of January 11, 1896, I recommended for an early dwarf pea the American Wonder, McLean's Little Gem and Nott's Excelsior. I still consider them about as good as any. They are very early; as well as wonderfully prolific, especially if the ground is well enriched, and occupy but little room, as they need no bushing.

The Improved Stratagem.—I do not consider this variety strictly a dwarf pea, as some seedsmen do, but half way between a dwarf and tall variety. However, it is one of the best, bearing pods of immense size, with large dark green peas of the very best quality. One can make no mistake in planting this choice pea.

Tall Varieties.—If I were to be confined to only two varieties, they would certainly be the Yorkshire Hero and the Champion of England. I have never found any better varieties, and I have raised a great many different kinds during the past eighteen years. The Yorkshire Hero is not generally classed as a tall variety, but on rich land it does better bushed as does also the Champion of England.

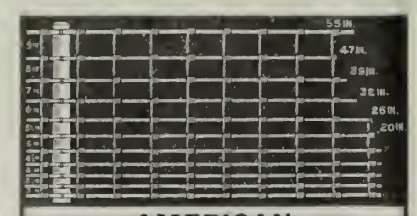
Mammoth Luscious Sugar Pea.—I am fully satisfied that this valuable edible podded variety is not generally known. I have never seen it grown here, nor in other places I have lived in this State, by any one excepting myself. The pods are from 5 to 6 inches long, and very broad, and are almost entirely stringless. The peas are not shelled but are cooked with the pods, and are equal, if not superior, in my judgment, to the best string bean. As the vines grow from 4 to 6 feet in height they must have a support of some kind. I can see no reason, however, why this valuable kind of pea could not be profitably raised on the warm sandy soil of southern California, in exactly the same manner as they do Lima beans, as they can be planted very early in the season, and will mature before the rainy season is entirely over.

When to Plant.—Here I find, taking one season with another, that February 15th is early enough to commence planting. One must be governed in a great measure by the locality in which they reside. When the peach buds begin to show the pink is a good time to commence planting, and for a succession plant every two weeks. I planted a short row last December, but long continued rains (nearly 30 inches to date—Feb. 3), heavy frosts and low temperature, down to 21°, 22°, 23° and 24° above zero several times, has had a very bad effect on them, and I am satisfied my peas that I will plant within two or three weeks will outstrip my December planting.

Lettuce.—I mentioned lettuce in my last article, stating when I planted my first seeds, etc., but did not enter into detail. For the benefit of my correspondent, and other Pacific Rural Press readers I will say that I consider the Hanson as good as any. It is very sweet, crisp and tender, and grows to a large size if the soil is made rich, as it should be, to insure the best of success. Sow the seeds for a succession on a raised bed every two or three weeks throughout the winter, commencing about the middle of August. Be extremely careful not to sow the seeds too thick, otherwise the young plants will be weak and almost worthless. Transplant when quite young, taking up each plant very carefully with as much dirt on it as possible. Set the plants at least sixteen inches apart and if you want to raise lettuce to perfection make your ground rich with the best quality of manure. I find nothing that will take the place of lettuce for young chickens, they are extremely fond of it and grown poultry, I often think, prefer it to any other kind of green feed I have ever raised for them.

Ira W. Adams.

Bay State Home, Calistoga, Cal.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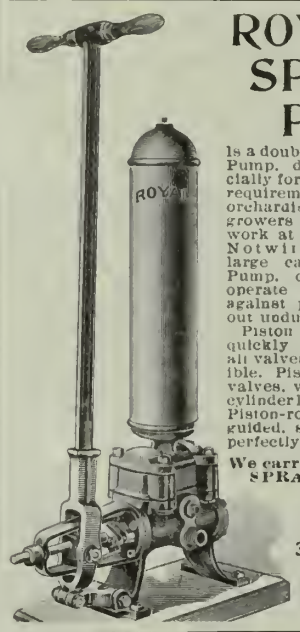
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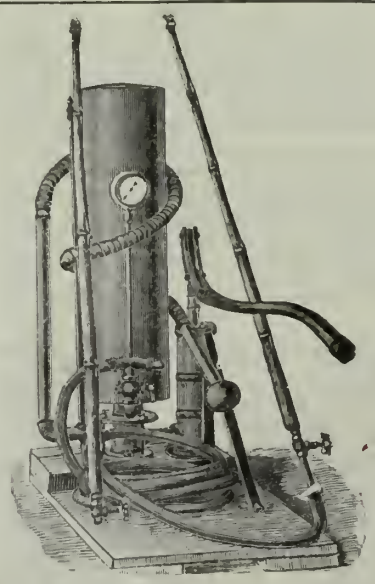
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To the Editor:—Through the columns of the Pacific Rural Press, I desire to present to the members of subordinate Granges throughout the State the desirability of taking some immediate action in order to influence our legislators to take necessary measures to reform the management of the harbor of San Francisco. The Chamber of Commerce, as well as other commercial bodies of San Francisco, also a committee of a former State Senate, have shown in their reports that the Harbor Commissioners of San Francisco have managed their affairs in an unbusiness-like manner, and that the heavy tolls that must be imposed on shipping to keep up this reckless management is hurting the reputation of the port and damaging the entire business of the State.

The farmers of California should be vitally interested in this matter, for it is one that touches their pockets. All the excessive and unnecessary expenses, due to the unbusiness-like management of the Commission, are charged up finally against the farmer and his producc.

The present legislature has sent a committee to San Francisco to investigate the police department of that city. It would seem that San Francisco ought to be able to correct any evils in her police department without the aid of the State, and that the legislature would have benefited the people of the State more if it had sent a committee to San Francisco to investigate the Harbor Commission.

I trust every Grange and Farmers' Club in the State will immediately pass resolutions urging their representatives in the legislature to take immediate and effective action in this important matter. J. S. Taylor,
Lect. Cal. S. G.

Napa, Cal., Feb. 8, 1901.

Petaluma Grange.

To the Editor:—Petaluma Grange, No. 23, P. of H., meets at Gross's Hall on the 2nd and 4th Saturdays of each month at 1:30 P. M. At our regular meeting of February 9th we had a good attendance, and there seemed to be more than usual interest taken by the members. Bro. W. W. Chapman made a very comprehensive report of the Co-operative Association meeting, held in Oakland, to which he was a delegate from our Grange. He seemed to think from what he learned at the Association that the outlook for the co-operative work in the State was very good.

We have been talking up the starting of a co-operative store on the Rochdale plan for some time, and a committee of three was appointed by Worthy Master C. D. Grover to canvass for members.

The trade card system, which we have been using for the last few years, has been of great benefit to individual members, and to the Grange as a whole.

Our Grange is in a good condition socially, financially and in numbers, and we look for many new members in the near future. A. E. J.

The latest thing in steel wheels for farm wagons is the patent grooved tire wheel made only by the Havana Metal Wheel Co. of Havana, Ill. The heads of the spokes being down in the groove below the surface of the tire, they are protected so the head cannot wear, as in plain, flat-tired wheels. The Havana Co. claim that the grooved tire wheels will outlast half a dozen wheels made with plain tire with the heads of the spokes exposed, and as they do not charge any more for them, it will pay to investigate before placing an order for steel wheels. They also make ten different kinds of low down truck wagons. Send for postal catalogue and prices.

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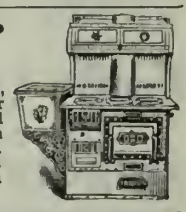

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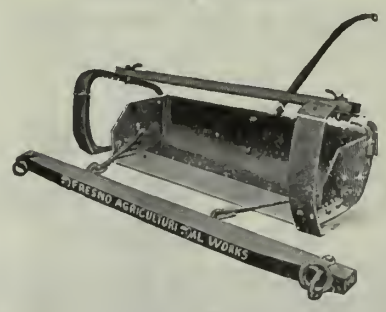
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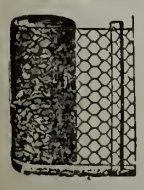

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SIGNS OF PREGNANCY.

TO THE EDITOR:—Can you tell me of any sure way of knowing when a cow is in calf. Mine was served in June last, but is not increasing in girth very much. She calls more or less every day, so I cannot tell by that.—READER, Alma.

The signs of pregnancy of long standing should be very plain: an enlargement at the right side dependent; fœtal heart-beat should be very plain—push suddenly with fist and on the rebound hold the palm of hand on the mass when the fœtal movements will be very plain; another constant sign would be disinclination to exert herself.

FOR SCRATCHES.

TO THE EDITOR:—Will you kindly inform me through our columns what is a good treatment for a disease of horses' feet commonly called "scratches." Every time the mare is driven in wet weather there is a sort of cracking or breaking out of the skin at the fetlock of the fore feet. I have tried several kinds of ointment to no avail.—READER, Santa Clara.

Take zinc sulphate, 1 ounce; lead acetate, 1 ounce; sub-sulphate iron, ½ ounce; tinct. opium, 2 ounces; water, 1½ pint. Saturate cotton and bandage on after thoroughly washing with warm water and castile soap. Water on scratches or mud fever is like so much poison unless it is thoroughly rubbed and dried.

LUMPY JAW.

TO THE EDITOR:—How long will it take to cure a cow with lumpy jaw with iodide of potassium? Is it contagious or hereditary?—F. B. MARKS, Dos Palos.

It takes several months to cure lumpy jaw with the iodide treatment. The Bureau of Animal Industry, Dept. of Agr., Washington, D. C., publishes a pamphlet on this subject which gives full information and the results of experiments. The disease is contagious both to man and beast, providing the ray fungus comes in contact with an abraided surface.

WHAT IS IT?

TO THE EDITOR:—I have lately had a disease attack my swine that I have not been able to find out the name of or the remedy for. It has mostly attacked large hogs weighing from 150 to 200 pounds. They would be taken by a swelling on the throat or jaw, which would swell up until it was a very large bunch, and the hog would die within twenty-four hours of the time of taking the disease. There appeared to be no other trouble or disease about them. In one instance I lanced a lump, and a pint of greenish pus run out; it did not save the hog. It has none of the symptoms of cholera. I have consulted a veterinary surgeon, but he does not know what the trouble is. Will you be kind enough to answer in your next issue?—T. C. MCCHESNEY, College Park.

I cannot tell from symptoms, but a bacteriological examination of the pus from the throat will most likely reveal the trouble. Have Dr. J. H. Eddy or Jno. Waddel hold an autopsy on the next carcass. DR. E. J. CREELY.
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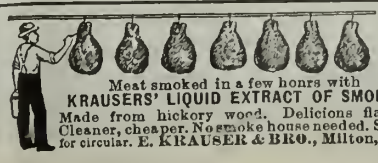

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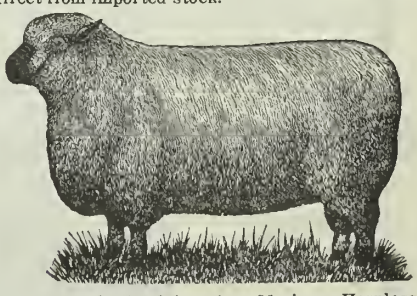

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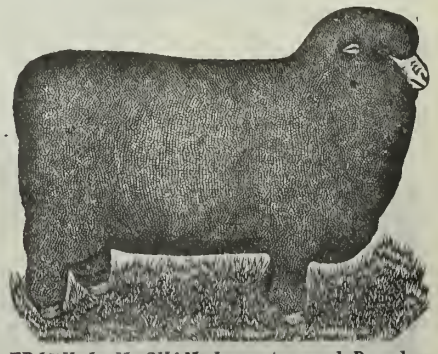

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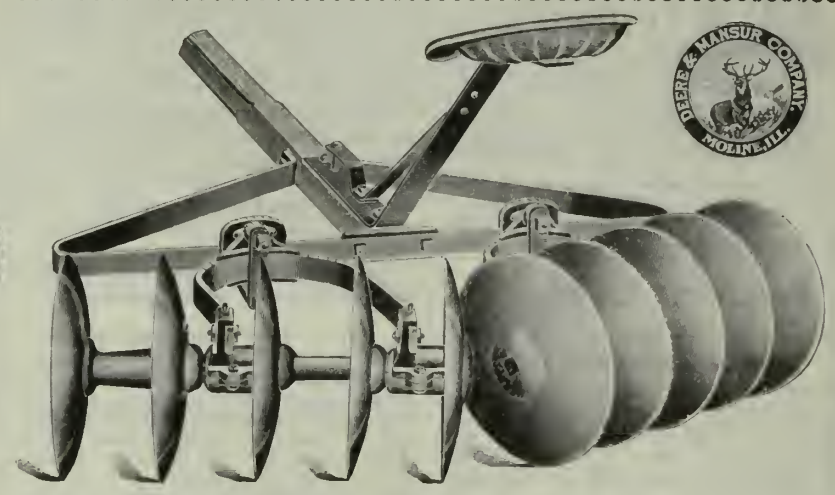

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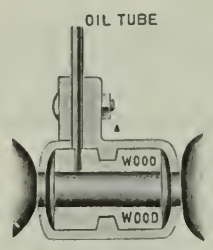

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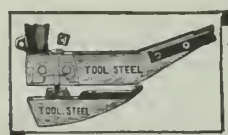

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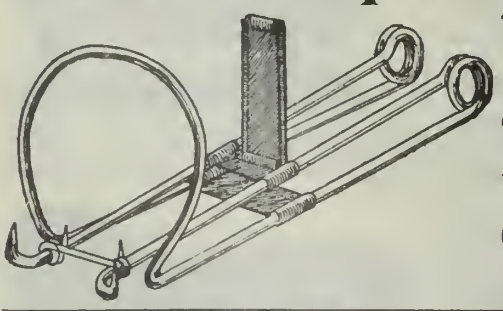

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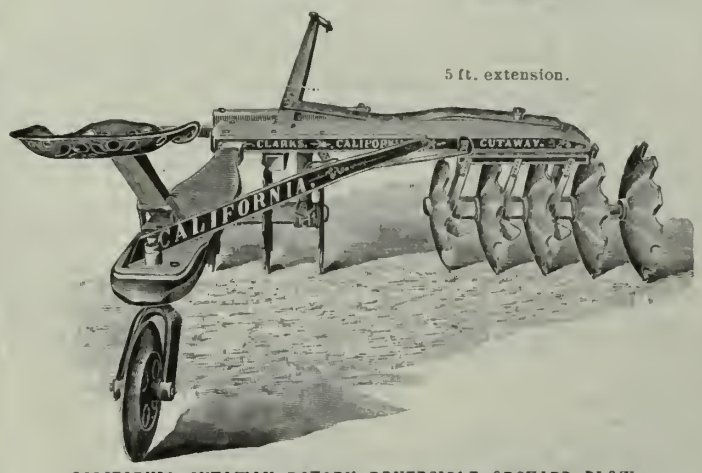

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Shasta Daisies.

Probably Mr. Luther Burbank of Santa Rosa has done no more strikingly popular thing than the origination of the splendid blossoms which appear upon this page. The type of blossom to which it belongs is of splendid decorative effect, and is now perhaps more widely appreciated than ever. The old ox-eye daisy of the East was always praised in whispers for its beauty; at the same time it was condemned in thunderous tones for its pestiferous weediness. The marguerite is a shrubby perennial in California, showing thrift and bloom even in very trying situations and is highly esteemed. In view of these facts, how wide will be the appreciation of the glorified form of the type which Mr. Burbank has secured after several years crossing and selection, using the weedy free-flowering American species, the rather large but coarse European species and the Japanese species (Nipponicum). "Shasta" is only the first of the new type, some of which were for the first time exhibited in the window of a prominent San Francisco florist. Crowds of people visited the establishment to inquire about the latest floral wonder. The blooms, when cut, remain perfectly fresh and in good condition for two weeks or more. Many new and graceful forms have lately appeared among the "Shasta daisies," and well-marked colors are now appearing in a flower which was never before seen except in white. Some are almost perpetual bloomers, and lately some perfectly double ones have appeared. Only the "Shasta" is available to the public this year.

We have seen the plant at Mr. Burbank's place, and quite agree with him when he says in his 1901 "New Creations" that, while the "Shasta daisies" were being bred and educated up to their present state, more admiration has been bestowed upon them by visitors than upon any other flowering plant growing on his grounds, and with good reason, for to-day no other flower can compare in extent of usefulness. Their first qualification is hardiness. They can be grown out of doors, wherever it is not cold enough to kill oak trees. They are perennial, blooming better and more abundantly each season. They can be multiplied rapidly by simple division and they are not particular as to soil. They bloom for several months—in California nearly all the year. The flowers are extremely large and graceful, averaging about a foot—often more—in circumference, with three or more rows of petals of the purest glistening whiteness, on single, strong, stiff, wiry stems, nearly 2 feet in length. What they do in a clump is shown in the larger engraving.

The Shasta Daisy—Chrysanthemum Leucanthemum Hybridum.

Their free flowering is thus fully demonstrated, and a field view, which we may use at another time, shows how effective they are when bedded on a larger scale.

Mr. Burbank keeps his floral work at good speed all the time. In California he is best known for fruits, because our commercial interest is so strong that way; but abroad, where they have time to think more of the beautiful and where they have more money to expend for its newest manifestations, Mr. Burbank is perhaps best known for his gladiolus, his lilies and for a host of other wonderful and unique triumphs in origination. It is said, in substance, of a master in some other line that few things escaped his touch, and he touched only to adorn. This is, indeed, Mr. Burbank's relation to the vegetable kingdom—at least from a cultural point of view.

The "Shasta" Daisy at Home, on Mr. Burbank's Grounds at Santa Rosa.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, February 23, 1901.

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The Week.

We are looking at something at this moment which is enough, could he see it, to make an old Californian kick the frescoed ceiling of his tomb. The dear old parties have escaped the humiliation of these later years. Under command of the Chief of the Weather Bureau, who, by the way, had better not come out here with President McKinley, Director McAdie of the California Section has issued his "Snowfall Bulletin No. 1." Think of it! A California Snowfall Bulletin just at a time when all our agents are digging Eastern people out of the drifts to send them to a land where the snow never falls and the sun never sets! Mr. McAdie needs a little legislation like that now pending in Sacramento to shoot editors who say the plague is in California. But he does the best he can in obeying orders, for he shows how beneficent is snowfall as a supply of water for irrigation, mining and the like. On this ground a "snowfall bulletin" may be pardoned or even viewed with pride by the present generation of industrialists, but the old ones would have never permitted it—never.

But as we have a Snowfall Bulletin we might as well make the most of it, and so thinks Mr. McAdie, for he proposes to give us another later on for February. So far the snowfall in central and southern California has been heavier than for many years past—and those having land deals in northern California should note the fact that the bulletin says nothing about snow in that strictly tropical region. The bulletin also says that the snow in the Sierra seems to be well packed and as there have been no marked thaws the snow will probably stay up there until it is needed for summer irrigation. If it undertakes to start down unexpectedly the Weather Bureau will give notice so the valley farmers can get their house-boats doubly roped. There seems now some likelihood of immediate need of this, for as we write this week's storm seems to be gaining vigor and it now rains so easily that it may be difficult to stop. The crops are all right if they do not get drowned.

Wheat is sloppy—like the weather. Shipping is a little lower, but milling is about the same as before. Two full cargoes of wheat have gone out and a third ship had some wheat with much barley. Barley is also going by rail in large lots, but the feedstuff which is left behind is weak. Oats are coming more freely from the north and the market is easier, but not lower. Corn is quiet and steady. Beans are inactive but unchanged. Bran is a little easier—there is more offering and the demand is slow. Hay drags at the old figures; the rain promises lots of feed and it is too wet to handle hay anyway. Though prices are the same, there is a free disposition among holders to take them when they can. Beef is firm and mutton unchanged, though a trifle easier and moving slowly. Hogs are also unchanged. Eastern hogs are still coming and domestic supplies scant. Butter is drooping but not lower yet. Cheese is also weak and slow. Eggs are lower and weak, though northern shipments are helping a little. Poultry is firm for all good stock, young and old; receipts, both local and Eastern, are light. Turkeys are scarce and higher. Fancy potatoes are in good demand and onions are too scarce to quote—selling in a small way at very high prices. Oranges are moving more freely, although there are still too many of low grade. Fancy oranges have sold higher than at any time since this year's auction opened. Lemons are firmer, as limes are out of sight. There are no fancy apples to speak of and common apples are getting scarce, but no one seems to care much for them. Dried fruits, except raisins, are being pushed a little by holders, but brokers do not respond. Some fairly good dried apples and pears have been sacrificed. Common figs are also ruinously low this week. The stock of almonds is light, but few want them. Some second grade walnuts are offered, but they take a slow gait. Wool is worse; quotations have dropped a little, but there is no movement yet.

At last a barley grower has become excited at the senseless spectacle of Uncle Sam freighting oats across the country, while he can buy any amount of feed barley at low rates on this coast, and it will do just as well or better than oats for horse and mule feed in Asia. Mr. J. H. Thompson, of San Luis Obispo, has written Senator Bard at Washington as follows: "We feel that, living as we do here on the western coast, with warehouses bursting with the best feed in the world and no market for it, that we are being discriminated against when oats are being bought by the government in Eastern markets and shipped across the continent for reshipment from our ports, to the exclusion of the produce we raise." It is a good point, and one which Senator Bard, who knows barley, and beans, too, as well as any man in California, will not be slow to take up. He has already transmitted the letter to the Quartermaster-General with the recommendation that California barley be substituted for Eastern oats for the government cavalry service in the Philippines. Probably an argument or some harder pressure may be necessary to overcome the conservatism in the army management, but barley is all right. Let the Quartermaster take testimony. There is no lack of it here, and at the East, too. The Secretary of Agriculture can show how barley stands as a feed grain.

The finding of the phylloxera in the San Joaquin valley is causing a change in attitude toward the introduction of vine cuttings, etc. Heretofore it has been against the ordinance to import into Fresno county any vines, whether resistant or non-resistant, the theory being that phylloxera could be introduced on the resistant and spread to the non-resistant. Since phylloxera has manifested itself in scattered places, the necessity for remedial measures has become urgent. The theory set out is not sustained, and the Supervisors have adopted an ordinance permitting the importation of vines resistant to the phylloxera, to become operative after publication for three weeks.

The fruit growers' transportation committee has served a forceful memorial upon the railway managers, which we hope will accomplish something for the shippers. The chief request is for fair time of transit. Last year much fruit was lost simply because it was taken at snails' pace across the continent and side-tracked while gravel and other perishable material went by. The time asked for by the growers is six days to Chicago and similar points and eight days to New York and similar points. It is believed that if such a schedule is granted and faithfully carried out, great relief will come to the deciduous fruit interests of the State. The committee feels safe in saying that there would have been 1000 carloads more of fresh fruit shipped from California last season if there had been reasonably fair service. If relief does not come to the grower in some form, shipments of perishable fruits must necessarily decrease; shipments would have been much lighter last year had not shippers had contracts and obligations which had to be fulfilled. The committee does not ask for lower rates on deciduous fruits, though shippers feel that the deciduous fruit interests are greatly handicapped by additional transportation charges in comparison with similar charges against citrus fruit. For instance, it costs but $325 to ship a 26,000-pound carload of oranges to New York, while it costs $415 to Chicago, $520 to New York and about $545 to Boston, including refrigeration charges, for deciduous fruit, thus showing an additional cost for transportation of from $90 to $220 against deciduous fruit. But this point will do for another time. Quick transit is now the chief point.

On the sale of refrigerator cars last week we apparently whistled before we were out of the woods, for it has since transpired that the Earl cars have been sold to Armour instead of to the railways which should own them. It is a second grade funeral director who has to pay tribute to a hearse-owner and it is a second-rate railway which allows a car company to intervene and gouge its shipping customers. All this should be done away as soon as possible. Mr. Armour's manager assures the growers that they may fare better now that the competing cars are bought out. It is not the usual course, but it may be so in this case. It does seem that shippers could not fare worse, for they have paid all along even more than the traffic would bear. So we close our car-whistle until we get to a clearing. Perhaps we shall slide out of this difficulty by a very slick route. A man from New York brought a bottle of liquid air to San Francisco last week. He has figured out that 300 gallons of the fluid, produced at a cost of 1 cent a gallon, will refrigerate a car of fruit from California to New York. The most we have secured hitherto when the extortion of refrigeration has been urged has been air, but this may be another kind. If we are not mistaken the people who have been giving the growers so much air in the past had something else in the bottle.

One of the best things President Wheeler of the University of California has done thus far for the promotion of agriculture is the engagement of Prof. Ellwood Mead of Wyoming to organize a department of irrigation at Berkeley. The announcement of this fact commands general approval. Prof. Mead is learned in irrigation law and irrigation engineering. He is a broad man and can be trusted to propagate statesman-like views and policies. He has done so much along these lines for the new States of the interior that he comes to California with a record calculated to command confidence and esteem. It is expected that courses of lectures will be announced very soon, and we shall haste to give definite details of their arrangement.

The booming live stock interests of the interior are still seeking ways to direct their forces, and again the coast cattlemen are pressed to affiliate themselves. There will be held in Denver, on March 5, a convention, the object of which is to make a permanent organization. The present basis of representation is individual membership, all cattle-growers and owners being eligible. At present any cattle-grower may become a member by sending his address and an initiation fee of $5 to the secretary, A. E. de Ricoles, at Denver. The reason for the formation of this association is the fact that the National Live Stock Association, which embraces all branches of the live stock industry, is unable to deal with many matters which concern only the cattlemen. All other branches have separate national organizations, and the Cattlemen's Association was therefore formed at the late convention at Salt Lake. We hope California will have a share in the undertaking.

The proposition to give the directors of the prune association power to proceed with the advertisement of the product bids fair to be fully realized before this issue reaches its readers. Last Saturday two meetings of prune growers, members of the association, were held in San Jose, and at both of them the proposed amendment to the by-laws granting the directors power to spend not more than $200,000 for advertising and pushing the sale of prunes, and to borrow so much of that sum temporarily as might be necessary upon the security of the stock on hand, was endorsed almost unanimously, while a spirit of determination to maintain the association and uphold prices was expressed by all.

QUERIES AND REPLIES.

Growing Stock Beets.

To THE EDITOR:—What is the best beet I can plant on land that is hard, and runs together when wet, and contains considerable "black" alkali? I want to feed them to hogs and milk cows. What is the best beet (to be used for the same purpose) to plant on loamy bottom soil? How many pounds should be sown per acre?—DAIRYMAN, Crows Landing.

The land you describe is not good beet land and we should be disposed to make small trial this year, to see how it works before undertaking large planting. Land which runs together and dries hard will have to be handled just right to get a stand of beets or to keep them growing freely afterwards. Though beets will stand more alkali than many other plants, they have their limits. Therefore, again, try a small piece and use some gypsum in the seed drill, or you may not get the seed to start. The best stock beets are the Long Red Mangel Wurzel and the Golden Tankard. They are as good as any to try on your bad soil and they are the best for your good loam. The rows should be 3 feet apart to allow for horse cultivation, and if you get plants 1½ feet apart in the row it will be near enough for these large roots. Five pounds of seed will do for an acre, the plants to be thinned out, and they may be transplanted to fill the rows if they are taken when small and you do not mind the work. The crop for well cared for beets on good soil will be immense and they make good feed to use with alfalfa hay, especially. They can be left standing and fed late, when green stuff is scarce.

Large White Lupin.

To THE EDITOR:—I send you a few seeds of a kind recently received by a neighbor from Portugal. My neighbor says the plant is used in that country for green manure—that they sow the seed broadcast in the fall. The plant makes a strong growth by spring, when they turn it under for corn ground. I thought it might be good here for our orchards, and will test it. Can you name the plant from the seed?—D. J. BROWN, Napa.

The plant is the large white lupin (Lupinus albus), and it is an interesting fact that it is the same plant that the agricultural department of the State University has been distributing this winter for trial as a green manure plant, the seed having been imported from France by the United States Department of Agriculture. This lupin is used extensively in southern Europe for green manuring, and seems to be one of the few species adapted to the peculiar needs of California orchards. Early sowing is strongly recommended to get a growth before spring plowing. It is now too late for orchard trial, but it may do for corn land if there is enough moisture in the soil for the lupins and the corn also.

Fashions in Fruits.

To THE EDITOR:—Which of the two peaches—Late Crawford and Salway—do you consider the better, regardless of the time of ripening? Will you mention two or three clings that wouid probably pay best here? I would like to try the Phillips' and Yellow Tuskany, if I can get them. Which two or three apricots would you recommend? It seems to me, as near as I can find out, that the fashion in peaches and some other fruits is somewhat as it is in ladies' bonnets.—DR. A. L. MAHAFFEY, Corning.

The Salway is on the whole the better peach. Phillips' Cling is good, and we suppose the nurserymen are not sold out of it yet. Yellow Tuskany is not the same as the Tuscan Cling, of which the correct name is Tuskena. This last is a good peach and largely grown in the upper Sacramento valley. You would also do well with Seller's Golden Cling and Orange Cling. These are all fine yellow clings. Royal, Blenheim and Hemskirk apricots are about the safest to plant. The fashions in fruits change, but not as with ladies' bonnets. Fruits change according to buyers' views and uses; bonnets change to suit the sellers' interests—the fruit grower and his wife are both pinched.

Growing Figs in Georgia.

To THE EDITOR:—The fig is a good fruit for our section. Will you tell me if it is best to trim the tree to one main stalk or to allow it to assume its natural bushy growth, sending up annually long suckers from the roots? Any direction whence I may get information on fig culture will be much appreciated.—IDA L. HOLT, Macon, Georgia.

We dare not write of growing figs in Georgia. In a general way, however, where you have a minimum temperature which does not kill the fig wood, you can grow to best advantage standard trees with a single stem branching at about 4 feet from the ground. If you have to protect the wood by covering or laying down in winter, it is better to grow bushes which can be easily pegged down or drawn together for covering. For growing figs in colder climates than ours you can get an interesting pamphlet by applying to Col. G. B. Brackett, pomologist of the Department of Agriculture at Washington. It also has a very good sketch of fig growing in California by Dr. Gustav Eisen.

Fertilizers for Early Peas.

To THE EDITOR:—We have found that early peas require rich land, and, no matter how rich the land may be, naturally early varieties seem to respond quickly to manure. My soil is a black loam, clay subsoil, and the greater part has been underdrained. It has always produced heavy crops of grain, especially of barley and oats, and two years ago twenty-one acres of wheat produced 1440 bushels. What commercial fertilizer can I apply for the special advantage of the early peas?—GROWER, Mendocino county.

Of course, the production of the earliest market peas is conditioned largely upon winter temperatures, and for this reason the warm hillsides in the lower part of Alameda county are freely used. It is a fact, however, as our correspondent states, that quickness in the early peas is promoted by fertilizing, and, other things being equal, the fertilized peas will come first. It has been found by the experience of pea growers in the Southern States that phosphoric acid is particularly concerned in hastening the crop. Nitrogen is probably not needed in such soil as you describe. The pea only needs a start in this direction. It has its own sources of nitrogen after that, and excessive growth of plant is not in harmony with early fruiting. If you apply about 800 pounds per acre of a fertilizer containing 8% of potash and 8% of phosphoric acid (both actual per cents of available material), you will come about as near to the needs of the crop as you can in advance upon a soil which has not been fertilized. Fertilizer dealers will furnish you goods with these percentages guaranteed.

Wine Grapes for the San Joaquin.

To THE EDITOR:—Will you kindly tell me through the columns of your paper whether the Zinfandel is the best all around wine grape to plant? Is it one of the heaviest bearers? I am told there are seasons when it does not make enough sugar, also that it is liable to mildew and grape rot. Which would be the better of the two, the Malaga or the Feher Zagos? They both produce about the same, I believe. Which is the least liable to disease? Also give name of a good book on the chemistry of the soil.—A. R. P., Dinuba.

The Zinfandel is very far from the best grape all around or any other way. It has hardly any standing except in a few places, and is not to be commended. The best red wine grapes for the interior are the Alicante Bouschet and the Vandepenas. They are all around good bearers, healthy and vigorous. The old Mission is gaining some renewed popularity for port wine. The Malaga is healthier and better than the Feher Zagos, which is quite liable to rot, but the Palomino is better than either for white wine—especially for sherry.

The best book is "The Soil," by Prof. King. It discusses the soil from both chemical and physical points of view. It is furnished by the PACIFIC RURAL PRESS at 75 cents, postpaid.

To Get Dandelions.

To THE EDITOR:—Will you kindly tell me where I can obtain dandelion seeds to plant?—J. J. CLARK, Petaluma.

One of the most common ways to get dandelions is to buy some "pure Kentucky blue grass" seed and sow a lawn. You may get dandelions enough to keep you busy the rest of your life, unless you move to a new place. There are, however, improved dandelions with extra large leaves used for salad purposes, which are offered by Eastern seedsmen. Probably any seedsman advertising in the PACIFIC RURAL PRESS can supply you.

Well-Fed Poultry.

To THE EDITOR:—We have a flock of White Minorca pullets that were hatched the latter part of May. They have since last September been fed mornings a mash of bran and cornmeal (the last few months barley has been added to the mash), mixed up with buttermilk, a dash of salt and cayenne pepper. At night they have whole wheat. They also have all the sour milk they want, as the trough is never empty. Do they need meat scrap or meat meal?—SUBSCRIBER, Corning.

We should consider them well fed; the milk helps to balance the ration and largely takes the place of meat; but still fresh meat scraps could be occasionally used to advantage for sake of variety, if it can be had cheaply.

Submergence of Grape Vines.

To THE EDITOR:—How long can I have the vines in the vineyard covered with water without injury to the vines?—SUBSCRIBER, Parlin.

When dormant the vine will endure almost any period of submergence—two or three months will not be excessive, providing sufficiently low temperatures prevail.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 18, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cool weather continued during the early part of the week, with severe frosts in many places. Higher temperatures prevailed toward the close of the week and light showers of rain fell in most sections. The warmer weather has been beneficial to grain and green feed, the growth of which has been slow during the past months. No damage has yet been done by frost. The soil is still rather heavy for cultivation, but some farmers are plowing and seeding. Grain is in good condition and pasturage is plentiful. Early fruits have been benefited by cool weather and buds are swelling. More than average crops of all kinds are expected this season. There is a good supply of snow in the mountains.

COAST AND BAY SECTIONS.

Conditions have been favorable for all crops during the week, the higher temperature toward the close having been especially beneficial to grain and grass, which are now making rapid growth. No injurious frosts have occurred during the season. Light rain has fallen in some sections. Plowing and seeding have been resumed, but this work is nearly completed in most places. Tree and vine pruning are in progress. Almonds are in full bloom in several localities. Grain is in good condition and feed is plentiful except on some of the sandy lands. The correspondent at Arroyo Grande states that citrus trees have not been injured by the severe frosts, and that lemons and olives are very thrifty.

SOUTHERN CALIFORNIA.

The weather has been generally clear and warm during the week and very beneficial to grain and grass, which are now in excellent condition. A large acreage of grain has been sown and prospects are good for the largest crops in several years. The soil is in good condition for cultivation and the planting of later crops is in progress. Deciduous fruit trees are beginning to bud and appear to have been uninjured by cold weather. Orange picking has been resumed and large shipments are being made. On the Cuyamaca and other contiguous mountain ranges the snow is reported to be from 6 to 10 feet deep, insuring a good water supply for several months.

SAN JOAQUIN VALLEY.

Cool weather, with frosts in some sections, prevailed during the first of the week, followed by warmer, cloudy weather and light rain in some places. Grain and grass have been greatly benefited by the warmer weather and are now growing rapidly. The early sown grain is looking remarkably well and the late sown is up and thrifty in many places. There is an unusually large acreage of wheat and barley and it will be increased in some sections if weather permits. Trees and vines are in excellent condition and pruning is well advanced. Almonds are in bloom. Many acres of new vineyards will be planted in San Joaquin county.

LOS ANGELES SUMMARY.—Moderately warm; fine growing week. Grain and feed are doing well and promise excellent crops. Plowing and orchard cultivation resumed except where ground is still too wet. Orange shipping has been resumed. Deciduous buds are swelling.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, Feb. 19, 1901, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	2.08	34.61	35.60	28.79	38	68
Red Bluff	.90	20.03	15.57	17 85	42	62
Sacramento	1.18	15 02	13.69	13.51	44	64
San Francisco	1 07	15.69	14.59	15.86	28	60
Fresno	.22	10.52	6.19	5.92	62	68
Independence	T	5.42	2.09	4.38	26	64
San Luis Obispo	.10	26.43	12.66	13.23	38	78
Los Angeles	.02	13.57	4.57	11.74	44	76
San Diego	.02	8.53	2.65	6.67	48	70
Yuma	.00	3.60	.76	2.42	42	76

THE VINEYARD.

Growing and Grafting Resistant Vines.

To the Editor:—I have read in the Pacific Rural Press from time to time, but more particularly during the past year, some very able and interesting articles from prominent vineyardists and experts in this State in regard to resistant stock, bench and field grafting, and their respective merits and advantages. Undoubtedly the question, at the present time, when the ravages of the phylloxera are so widespread and felt so badly almost all over the State, is a serious and important one to discuss, so I will ask the use of your columns to lay before your readers an account of my experiments in that line, since I have employed both methods of grafting the grape on resistant stock, with the hope that it might throw some more light on that vexed question.

It is undeniable that both ways of proceeding in reconstructing our vineyards have their advantages and drawbacks, though it is my honest opinion that bench grafting is the cheapest, safest and quickest method of the two, more so if rooted cuttings are employed instead of simple cuttings, and I entirely agree with one of your correspondents—Mr. Frank T. Swett of Martinez—when he says: "Use both methods, side by side, for that is the only really practical way of comparing results." This is exactly what I did, planting every other row in bench grafted rooted cuttings and the alternate rows in resistant rooted cuttings that I cleft grafted on the third year, and with results I will describe below.

Resistant Roots.—I will first say a word about resistant stock. My best results so far have been obtained on Riparia—the ordinary Riparia of Napa and Sonoma counties—and also on Riparia Gloire De Montpellier and Rupestris Phenomene Du Lot. I am using also Mourvedre-Rupestris, Rupestris St. George, Riparia Rupestris and Rupestris Mouticola, but these four last resistant stock are too new to me and I have forcibly to wait several years before passing judgment upon them. However, with Prof. Husmann, I think that Rupestris St. George has not yet been given a trial full enough to recommend its universal planting in California, and I blame its too warm adherents for generalizing too much in recommending its exclusive use. A correspondent from the Santa Cruz mountains wrote to me this winter that he found Riparia (Gloire de Montpellier) superior to Rupestris St. George. Others on the hillsides of our big ranges of mountains reported also that Riparia seemed to do better with them than Rupestris, which I have found also to be the case with me—at 2600 feet up in the Sierras. So the question as to the best resistant stock to graft upon may still be regarded as an open one. Our State has so many different kinds of soils—here deep, rich and moist; there shallow, poor and dry; here with more sand; there with more lime or disagregated granite in it, and so forth—that it is rather hazardous to recommend any particular stock in preference to others. So I do not think that it would do for our vineyardists to go at it blindly and plant this or that stock simply on the recommendation of experts—well posted and learned men, it is true, but who may be ignorant of the nature of the soil in which the vines are to be planted. I think that it would be safer for our vineyardists to do also a little experimenting of their own, and, for instance, if planting 100 acres in resistant stock, plant 90 acres with St. George—if the latter is their favorite—and 10 acres with some other stocks.

I will now give you my experience on bench grafting, which I consider the best, cheapest and quickest way of reconstructing a vineyard or starting a new one.

The English Cleft Graft.—The common English graft, as first invented and employed in England—hence its name—consists, first, in cutting both stock and scion obliquely, the slant being made in length say three to four times the diameter of the stock, stock and scion being, as near as possible, of equal size, though the scion should never be larger than the stock, but might be smaller. Then a longitudinal cut is made right in the center of the oblique cut of the stock and deep enough to have the tongue of the graft, which has to be prepared in a like manner, fully inserted in the longitudinal cut of the stock, and vice versa. This graft—a very solid one—was first employed for the propagation of trees with hard and brittle wood, such as oak, beech and hornbeam. But since the attacks of the phylloxera and the propagation of vines by grafting on resistant vines the English graft has come to the front—modified, it is true—and to-day it has become of general use and about the only one employed in bench grafting the grape.

The English Cleft Graft Modified.—The modification of the common English graft consists, after the stock and scion have been cut obliquely and over an inch in length, instead of splitting the stock and scion longitudinally through their center, in taking out from the center of each of them a tongue of wood, varying in length from 1 inch to 1½ inches, then inserting the tongue of the graft into the opening made in the stock by the taking out of the tongue of wood, and vice versa. There is a triple advantage to be obtained through this important modification of the English cleft graft proper: First, it does away with the knot that is formed by the insertion of the scion into the cleft of the stock right at the grafting by the old method, the taking out of a tongue of wood from both stock and scion rendering that portion of the stock after all the parts are in place exactly of the same size as stock and scion; then more surfaces are brought in contact and consequently the chances of union are greater; and, last, the tongues are made to run almost parallel to the fiber, quite another advantage, since it has been demonstrated that parallel surfaces unite more readily than oblique surfaces.

But where the difficulty arises in using the English cleft graft, modified, as described above, is in the taking of that tongue of wood out of stock and scion, as it is very hard to cut against the grain of the wood obliquely, and the tongue has to be over 1 inch in length and ¾ inch, more or less, thick at the base, then running down to nothing; for if the cuts do not fit it defeats the success of the graft. It takes, therefore, a very skillful and experienced hand to make this graft properly. So it was in order to remedy this difficulty in taking out long tongues of wood that one or several little tongues were resorted to as being more easily done with the knife. That last modification of the English cleft graft was published, described and illustrated in the Pacific Rural Press of Jan. 9, 1900.

Trabuc Grafting Machine.—Years ago, at the time that resistant stock was first adopted as a means to resist the attacks of the phylloxera by grafting, a Mr. Trabuc, in the south of France, invented an ingenious little machine, simple, strong, of easy execution, and doing the work quickly and neatly. That machine—which I have been using for the last eighteen years in grafting prunes, chestnuts, walnuts and grapevines—can be operated either in the field or at the bench, and the most inexperienced hand is soon rendered familiar with its working. When used at the bench, it is made fast to the edge by aid of screws, the stock or scion being put in its place alongside the iron guide and kept there firmly by pressing down on a lever with the left hand, undergoing first the operation of the oblique cut, which is done by drawing down the knife along the slanting guide; I, however, seldom use that guide, because of a long practice with the machine, and I can make the oblique cut just the same without it, so preventing the knife from getting dull by running over the guide. When the oblique cut is made, the guide, which is attached to the machine by a long brass spring, is let down, and the blade, which cuts both ways, is then pushed obliquely into the stock or scion and drawn back obliquely again, and out comes the tongue of wood. After stock and scion have undergone the same operation, they are inserted together, the tongue of one into the slit or, rather, gap of the other, being careful that the extremity of each tongue touches the bottom of the corresponding cleft or gap. Should the exterior tongues be too long, they can be fixed to fit easy enough with a sharp knife. As the Trabuc machine is small, light and easy to work, it can very well be used in the field, but, of course, by a hand well familiar with its workings, the scions being first prepared at the bench—a big help, I should think, to Prof. Husmann, the champion of field grafting.

Care to be Taken After Grafting.—I use in preference to plain cuttings one-year or two-year-old rooted cuttings whenever I can get them, and that for a two-fold reason: first, I gain fully one year by grafting rooted cuttings instead of ordinary cuttings, and a much larger percentage of the grafts will grow than if simple grafted cuttings had been planted in their place; then I meet with more success in my grafting with stock and scions of the proper size—I call proper size not less than ⅜-inch, but, rather, ½-inch in diameter—succeeding even to 100% of the grafts, a round per hundred with certain varieties of grapes, like the Cots of Tourraine.

After the graft has been inserted into the stock, I bind with raphia first soaked in a 3% solution of sulphate of copper and dried, and use it altogether dried; if used moist, in drying it is liable to make the binding loose and prove disastrous to the grafting. Then I tie the grafted vines in bunches of twenty-five and put them in ordinary sand or common earth in the cellar or basement — not out doors, to be planted when I am ready for it. I generally do my grafting when ready to plant in April, being unable to do so sooner, as it should be done; but it does not make any difference, the moment scions and stock have been put away during the winter in a proper place.

I always leave three eyes on the graft instead of two, as most grafters do, planting the grafted vine deep enough so as to have the lower eye below the ground; as to the second eye, I pile up the dirt, moundlike, all around the vine, both for strengthening the graft and burying that eye, letting the third, or upper eye, stick out. My object in so doing is to save the graft in case of frost, late frosts in the spring being frequent in this part of the State; for then, if the upper eye is killed by frost, the second one in the little mound will take its place, and if in turn that one is killed, the third one below the ground will save the graft from getting blind. As the graft is planted below the ground, it is liable to grow some roots; so in the middle of summer I dig around the graft and with a very sharp knife cut off all roots to be seen, being careful at the same time not to derange the graft in the least. I always tie the young vine to stakes, and think that on a large as well as a small scale it pays.

Bench Grafting Against Field Grafting.—As I have said at the beginning of this letter, when I first grafted vines on resistant stock, I planted grafted root cuttings in every other row—I mean rooted cuttings just grafted—and rooted resistant stock in alternate rows, grafting them on the third year. While succeeding with 85% to 90% of the former, I succeeded with but 60% of the graft of the latter, probably because a portion of the vines were rather too small to be grafted; nor did they bear hardly any grapes on that year, probably because the grafting was done a little late in the season. How was it with the bench-grafted vines? Of Cot De Tourraine I succeeded with every one, and on the third year—the year I grafted the resistant stock which had been planted the same year as the bench-grafted vines—I picked on the vine from eight to eleven pounds of grapes—one may think because the Cots are heavy bearers; of Morastel-Bourchet, Malbeck, "Zinfandel-Pineau" and "Etraire-de-L'adui," great favorites with me for making red wine, I had from four to six pounds, and less on Carmenet (called here Cabernet). Thus was the advantage of bench grafting over field grafting, though on a small scale, proved to me in a most striking manner.

About Vacancies.—As to the vacancies occurring both among bench and field-grafted vines, it is obvious that those among the former can be filled right on the second year and at very little cost, while the field-grafted vacancies, caused by the failure of the graft to grow, can be filled only on the fourth year, causing therefore much more trouble and expense. The vacancies among bench-grafted vines can hardly be perceived in the course of two years; but in field grafting, if such vines where the graft failed to grow were taken out and bench-grafted vines one or two years old planted in their place, which should by all means be done every time, it will take a long time for these new vines to catch up with the old ones.

Whether planting bench-grafted vines or resistant stock to be grafted in the field on the third year, I think that every vineyardist, whatever be the size of the vineyard, should keep a little nursery of his own, as has already been suggested by some of your correspondents, so as to have on hand at all times enough well-rooted grafted scions to fill vacancies. Here, of course, arises a little difficulty, for when we say that every vineyardist, small or large, should have a little nursery of his own, we must take into consideration that all of them are not precisely skillful in the art of grafting, simple as it may appear through cuts, and when the process is made more embarrassing yet by lots of special recommendations as to the taking care of grafted cuttings, their callusing, etc., all intended for the greater success of the whole operation, it may go beyond the ability of a good many, who then will declare field grafting the simplest method of the two, as being more within the reach of their understanding and trouble saving; and that is another reason why I think the Trabuc machine or a similar one, so simple and easy to operate, should be in everyone's hands.

Speaking of vacancies, how is it with field grafting? I am satisfied that, no matter how successful one can be with both the rooting of cuttings planted in the vineyard to root and the grafting of the vines on the third year, the number of vacancies the year the vines have been grafted averages 25% to 30%—quite a difficulty to confront. In my opinion, the best and quickest way to "reconstruct" a reconstructed vineyard—that is, to find a remedy for many vacancies—is simply to take right out such vines on which the grafting failed, and plant grafted vines from the nursery, two years old in preference, and if no grafted vines are obtainable, then plant well-rooted resistant vines, of which it is easier to have a good stock, and cleft-graft when large enough. I think that it is of the first importance to dig large holes, for by this time the roots of the surrounding vines must have reached close to where the vacancies occur, and with the expected result of disputing the ground with the newly-planted vines before the latter have had a chance to settle there for good; and I am, furthermore, satisfied that it would pay, even in ground known to be rich, to use manure in planting the new vines, so as to give them every chance to establish themselves well in the soil before the roots of the old vines would come and dispute with them possession of the ground. In filling vacancies I always dig the holes pretty broad, but not any deeper than those first dug, and that for the main purpose of cutting off the roots from the old vines, which by this time have spread more or less in all directions. I finally maintain that it pays better to plant less vines at one time, but plant them right and take good care of them, than to plant a large number in a careless manner, as so many of them are planted in California; and that it is better, too, to graft cuttings; plant them in nursery rows and postpone the planting of the vineyard to another year till enough grafted vines have been so secured. Felix Gillet.

Nevada City, Cal., Feb. 6, 1901.

AGRICULTURAL ENGINEER.

An Automobile on an Adobe Road.

"Yes, that looks all right here, but I'd like to see one of those concerns try to go along one of the roads up our way," was the comment of a Colusa county man recently on Market street, San Francisco, as he saw an automobile speeding swiftly up the asphalt pave. Automobiles have become so common now in many of our larger cities as to no longer attract universal attention, and their beauty, use and economy are being generally recognized. But in the minds of many exists the belief, as expressed by our Colusa county friend, that while they are all right on a city pavement, they would be only objects of vexation and derision on the bad country roads. To dispel such belief, we have had engraved the accompanying illustration of what may be styled "bubbling" under difficulties through adobe mud in Lake county, California. It is not a fancy sketch, but an actual photograph of the experience of an automobilist in a trip through northern California last November. The picture tells its own story and does not require any elaboration. The trip covered a distance of 120 miles from Ukiah to Sausalito, and was made in eight hours by P. F. Rockett of San Francisco on Nov. 29, 1900. Fifty miles of the 120 were traveled after nightfall. It will naturally occur to one looking at the picture that a machine that can shove through such roads is a good one when better bits of thoroughfare are reached, and that an automobile that can carry one at the average rate of 15 miles an hour over a rough country in darkness and daylight will win its way to popular use anywhere that wheels can traverse. The photograph from which the accompanying illustration was engraved was furnished by the Locomobile Company of the Pacific, 1255 Market street, San Francisco, and portrays one of that company's machines.

Automobiling Through Adobe Mud, Lake Co., Cal.

Suggestions on Gravel Roads.

From an essay by S. C. Sanborn at the Winters Farmers' Institute.

Road making is brought to perfection by constant practice and long experience. Soils and clays, sand and ores, gravels and rocks are made into beautiful streets by methods which are in conformity with their great varieties of character and with the laws of nature. The art of road making depends in a large degree for its success upon its being carried on in conformity with certain general laws. The following principles may be laid down as necessary to successful building of good roads: First, they should be hard, smooth, comparatively level, and fit for use at all seasons of the year; second, they should be properly located, or laid out on the ground, so that their grades may be such that animate or inanimate power may be applied upon them to better advantage and with the least loss of energy; third, they should be properly constructed, the ground well drained, the roadbed graded, shaped and rolled, and they should be surfaced with the best material procurable; fourth, they should be properly maintained and kept all the time in the best of repair.

Locating Roads.—Many of our roads were laid out without any regard to the general lay of the land and most of them remain to-day where they happened to be located years ago, and where great labor and expense are wasted in keeping them in their original location and in the vain hope of bettering their condition. Such roads should be discontinued and a competent engineer engaged to lay out the roads on the best lines of travel and around the hills instead of going over them, and placing the road on dry ground instead of through the mud sloughs of winter time. A great error is also made in laying out roads on section lines, and as these sections are all square it necessitates laying out the roads on the sides of the sections, hence a person wishing to cross the country in any direction except in a straight line must continually change his direction on straight lines instead of going diagonally. It also makes it necessary oftentimes to cross and recross hills and valleys which might be avoided if the road had been laid out properly. Graceful and natural curves which conform to the lay of the land add much to the beauty of the landscape and increase the value of the land along which it runs. Not only this, but the horse is able to utilize more of his strength on a level road than on a rough one. It is calculated that a horse can pull only four-fifths as much over a road that grades 2 feet in 100 as over level ground.

Grading.—One most essential feature of a good road is good drainage, and the principle of good drainage remains the same, whether the road be made on earth, gravel, shells, stones or asphalt. The very first demand of good drainage is to attend to the shape of the road surface. This must be crowned or rounded up toward the center, so that there may be a fall from the center to the sides, thus compelling the water to flow rapidly from the surface into the gutters, which should be constructed on one or both sides, and from there be discharged into larger and more open channels. No water should ever be allowed to flow across the surface of a roadway, but culverts, tile, stone or box drains should be constructed for this purpose. In addition to being well surfaced and drained, the surface should be kept as smooth as possible, that is, free from ruts, wheel tracks, holes and hollows. If any of these are in the road the water, instead of being thrown off, is held back, and either evaporated by the sun or absorbed by the material of which the road is constructed. In the latter case the material loses its solidity, softens and yields to the impact of the horses' feet and the wheels of the vehicles, and, like water poured upon a grindstone, the water poured upon a road surface which is not properly drained assists the grinding action of the wheels in rutting or entirely destroying the surface.

Drainage.—When the water is allowed to stand on a road the holes and ruts rapidly increase in size and number. Wagon after wagon sinks deeper and deeper, until the road becomes utterly bad and sometimes impassable, as is frequently found in many parts of the country during the winter season. Road drainage is as essential to a good road as farm drainage is to a good farm. In fact, the two go hand in hand, and the better the one the better the other, and vice versa. There are thousands of miles of roads in the United States that during the winter months are impassable because of bad drainage, just as there are thousands of acres of the best and richest meadow and swamp lands that are valueless on account of poor drainage.

Materials.—Most of the roads in this country are of necessity made of earth, although in the richer communities the most important roads are surfaced with gravel, shells, stones and other materials. Unless some new system for the improvement of public roads be adopted, the inability of country communities to raise funds for this purpose will cause the construction of hard roads to be very gradual for a long time to come. We must, then, make the best of the roads as they now exist rather than build new ones of specially prepared materials. The natural materials and the funds already available must be used with skill and judgment in order to obtain the best results.

The main requirement of a good road is that it should be firm and unyielding at all times and in all kinds of weather, so that its surface may be solid, smooth and such as the water will not penetrate.

Earth roads at their very best fulfill none of these requirements unless some artificial material is placed above the earth. On a gravel road which is well constructed a horse is able to draw nearly twice as much as on a good dirt road. On a stone road one horse can draw four times as much as he can on a well made earth road, while on a steel roadbed one horse can draw eleven tons, as demonstrated recently at an exhibition of the advantages of the steel roadbed given in New York. So it follows that if larger loads can be hauled and those loads be hauled quicker on good, hard roads than on dirt roads, then the area and number of people benefited will be increased in direct proportion to the improvement of the surface of these roads. Furthermore, it must be evident to even a casual observer that a farm 4 or 5 miles away from the market or shipping point which is situated on or near a hard road is in reality nearer the market than one 2 or 3 miles away located on a soft and yielding road.

The Gravel Road.—Hard roads may be divided into three classes—gravel, shell and stone—but I shall only touch upon the gravel road, as that is most applicable to this section. It is almost impossible for many communities to build stone roads, and it would be impracticable for this community to attempt it, owing to the proximity of such a good supply of gravel as is found in the bed of Putah creek. Such a surfacing of gravel could be—as, indeed, it has been—used to the best advantage, and gives far better results than earth alone. It is certainly the simplest, cheapest and most effective way of improving our roads. Most of our earth roads might be greatly improved by covering their surface with a layer of 3 or 4 inches of gravel, or even less, if kept in proper repair. The subsoil, however, should be properly drained unless of such a porosity as not to need much drainage, for water attacking the subsoil of a roadbed is fatal to the excellence of such roads. If over a clay subsoil, the gravel should be at least 6 inches deep—deep enough to prevent the weight of the traffic from forcing the surface material into the soft clay underneath, and also to prevent the surface water from percolating through, softening the clay subsoil and causing the entire roadway to be destroyed. On account of ignorance in the construction of such roads, indifference in the building, or in the improvement of them, gravel roads are too often much worse than they should be, and oftentimes entirely fail in their design of being good and serviceable roads. Many of them are made by simply dumping the gravel into the ruts, mudholes and other depressions made by travel, with no regard to the foundation, and simply left for the traffic to consolidate with the subsoil, with the result that the greater part of the travel during most of the year is done away from this illy made road and on the earth alongside. Other roads are made by covering the surface with inferior material, no attention being paid to the foundation or to the drainage. The result is that such roads usually become rougher and more entirely covered with holes and ruts than before.

Building.—In building a gravel road the roadbed should first be brought to the proper grade. Under ordinary circumstances an excavation should then be made of 8 or 10 inches, varying in width with the requirements of the business done on the road. For a farming community the width should not be over 10 or 12 feet. One which is too wide is not only useless, but the extra width is a real detriment.

Such extra width calls for a greater expenditure in the construction of the road and endless expense in keeping it in repair. The surface of the roadbed should have a fall from the center to the sides, and should be the same as that of the completed road, and should be thoroughly rolled and consolidated until perfectly smooth and firm. Indeed, I consider the use of the roller as of the first importance in the construction of a road. A layer of good gravel, not thicker than 4 inches, should then be spread evenly over the prepared surface and then raked down until thoroughly level. The best machine for getting the gravel onto the road is the spreading cart, which is so tilted and graded as to distribute the material in the most effective manner. The best results can be obtained by the use of the roller.

Finishing.—Do not allow the road at this stage to be thrown open to traffic, as it is apt to make ruts or depressions, which must be carefully avoided, or the good work already done will be largely lost and the subsequent work will be less effective. Now, on the supposition that the layer already applied has been properly consolidated, a second—and if necessary a third, and possibly a fourth—layer, each 3 or 4 inches in thickness, should be applied and treated in the same manner as the first layer, being careful to have each layer properly consolidated before the

application of the next, and the result would be a road that would wear for years with comparatively little repair, and which would give entire satisfaction to the patrons of the road. The thickness in the greater number of cases need not be more than 10 or 12 inches, and the fall from the center to the sides should not be greater than 1 foot in 20, nor less than 1 foot in 25. The last or surface layer should be rolled until the wheels of heavily loaded wagons running over it make no visible impression.

If the top layer should be deficient in binding material, so that it will not properly harden, a thin layer of about 1 inch of clay or clayey material should be spread over it before it is rolled. This material has a tendency to spread toward the sides under the pressure of the heavy roller, but this can be remedied by rolling the sides first. Under the roller depressions will form, and these should be filled as the work progresses, so that the road may be a finished product when the roller is removed.

Keeping in Repair.—Such a road should be carefully watched to see that no imperfections occur. To maintain it in good condition, it is well to have piles of gravel at frequent intervals along the side of the road, with which repairs can be easily made. As soon as ruts or holes appear some good, fresh material should be added, tamped down and raked off until thoroughly solid. The worn material coming from these ruts should never be used if a firm foundation is desired. On new roads the surface frequently needs rounding up. This also should be done with new material, applied in sections and then thoroughly raked and rolled until hard and smooth. Side ditches, culverts and drains must be kept open and free from all rubbish, so that no water will drain onto or across the road. Wide tires should be used on all heavy wagons that traverse gravel roads, as it has been demonstrated that a 4 or 5-inch road will last much longer without repair when wide tires are used than an 8 or 10-inch road made of the same material when narrow tires are used.

THE POULTRY YARD.

More About Poultry Feeding.

To the Editor:—How to feed poultry, young and old, to the best advantage, is a problem many a person has endeavored to solve. To have the young stock grow rapidly and mature early; to have hens produce the greatest number of eggs at the least cost—this is what all who give the matter of raising poultry any thought are trying to accomplish.

Practical experiments along this line have done much to enlighten those engaged in this business. There are very few who have not tried different methods of feeding in order to satisfy themselves which is the better way. There are many who are not yet satisfied they are doing as best they might who may find in this article some hints that will be found valuable.

The only way to attain best results is to experiment. Even unsatisfactory experiments may prove profitable, in that they may lead up to something better. But we can also profit by the experiments of those who have the time, the opportunities, the patience and the skill we do not possess. We will consider some of these.

A Careful Trial.—At the West Virginia Agricultural Experiment Station, painstaking experiments were conducted during seven months each of the years 1897-8 and 1898-9 to find the effect of nitrogenous and carbonaceous rations when fed to laying hens. "Among the many practical problems connected with the poultry industry," says the Station Bulletin, "there is none of greater importance than that concerned with the nature and proper quantity of food necessary for laying hens. And, although this question lies at the very foundation of successful poultry culture, yet it never has been investigated with sufficient care and attention.

"There are two great classes of food: One containing a large amount of carbon, of which corn is an example, and the other a relatively large amount of nitrogen, like wheat or lean meat. The breeds of hens selected for the experiment were White Leghorns, Light Brahmas and R. I. Reds. Each breed was divided into two similar lots, which were placed under exactly identical conditions, except the food supplied them.

"Both the nitrogenous and carbonaceous lots of fowls were fed each morning a ration of ground feed, mixed either with boiled potatoes or steamed clover hay. The grain mixture for the nitrogenous lot consisted of middlings, oil meal, ground oats and corn meal, in varying proportions; while for the carbonaceous lot, corn meal was the principal material. The experiments of both years showed that the fowls fed the nitrogenous ration increased in weight more than ten times as much as the corn-fed lot. They also laid nearly twice as many eggs. The total value of the eggs laid by the nitrogenous fowls was $194.84, and by the carbonaceous fowls $119. The per cent of infertile eggs was more than twice as great among the carbonaceous eggs and the fertile eggs did not hatch nearly so well as the fertile nitrogenous ones.

In conclusion: "Although the nitrogenous ration cost slightly more money, yet it was more profitable because more eggs were laid and the fowls gained more in weight. The eggs from the nitrogenous-fed fowls were larger, more fertile and hatched better and produced far more vigorous chicks than those laid by hens fed with carbonaceous ration."

Wide and Narrow Rations.—A series of experiments made by W. P. Brooks, of Amherst Experiment Station, Massachusetts, to demonstrate the difference between the wide (carbonaceous) ration and the narrow (nitrogenous) resulted in the following conclusions: "Corn, among all the grains, is relatively the least nitrogenous. It is rich in starch and fat. Some writers have reasoned that as the egg is very rich in the nitrogenous constituents the hen should receive very nitrogenous food, and since wheat is more nitrogenous than corn they have cautioned against the use of much corn and strongly advise feeding wheat largely to laying hens."

But, in these experiments, the hens fed on the wide (rich in corn) ration laid many more eggs, in both the winter and summer experiments, than those fed on the narrow ration.

"Let me further suggest that nature is generally a safe guide. 'Biddy,' kept healthy and vigorous, will take corn always in preference to wheat. Man conceived the idea that wheat is better for large egg production. He has been endeavoring to convince the hen that she doesn't know what is good for her. But, it seems that, after all, her instinct and not his supposedly scientific reasoning has been right."

Conflicting Results.—Now here we have the conclusions of carefully conducted experiments, by men who made a specialty of investigating poultry feeding. Those of the West Virginia station are the reverse of those of the Massachusetts station. It is the writer's opinion that a larger proportion of corn, either whole, cracked or in the form of meal than we are accustomed to feed, can profitably be fed. This has been his experience. Many poultry keepers are very shy about feeding corn. Wheat is the principal grain used all over this State. Try a little larger proportion of corn and see if your hens do not lay more eggs. But do not fall into the error of feeding too much. There is reason in all things. Use judgment. Common sense is needed in managing hens.

The Writer's Way.—The writer is well pleased with a system of feeding for eggs he adopted several months ago. It has given excellent results. In the first place mashes of all kinds are discarded. The system is one of dry feeding. The morning ration consists of bran, corn meal, meat meal and steamed alfalfa. A very light feed of wheat is given at noon, scattered in straw; also grass, finely cut. At night wheat, corn and crushed barley, in equal quantities, is fed, in straw, to promote exercise. A goodly amount of charcoal is mixed with dry meal; also, two or three times a week, oil cake meal, new process.

Too much cannot be said about the advisability of feeding meat meal once a day. Its use is increasing all over the country year by year. It stands one in hand, though, to procure a guaranteed article. Says the West Virginia Bulletin above quoted, "It is well known that ground fresh meat and bone is a very valuable constituent of a ration for egg production. In many localities, however, it is difficult to procure fresh bones and scraps from meat markets, and even when a supply is constantly available it is not usually an easy matter to grind the material for the fowls. On the other hand, beef scraps and meat meal can be bought of the poultry supply houses at any time, and being in a thoroughly dry condition can be readily mixed with other feeding stuffs.

Napa, Feb. 9. A. Warren Robinson.

A 5-inch pipe (actual inside diameter 5.045 inches) 10 feet long contains 2398.8 cubic inches. The area of the outside surface is 2.097 square inches.

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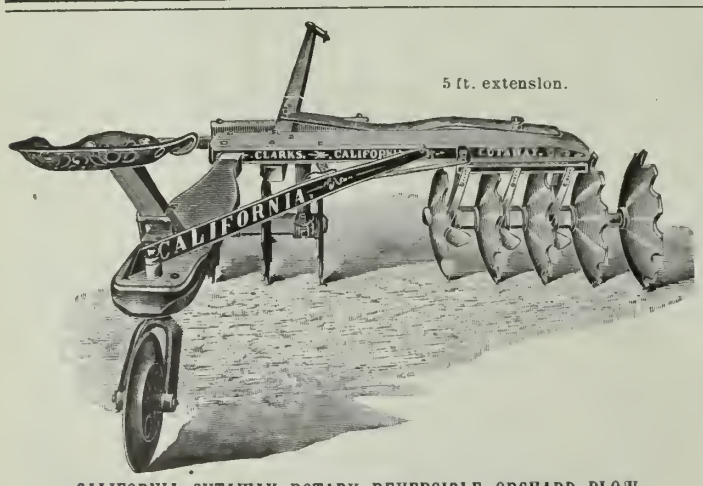

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DON'T worry. The California will take care of the WEEDS all right—kill 'em, BIG AND LITTLE—cut 'em to pieces and mix 'em with the soil. Land prepared with the California will NOT BAKE, CRACK AND DRY OUT. No lumps, no clods, land always level.

Use up-to-date orchard tools and you will make MONEY growing fruit. Write for catalogue, testimonials and price.

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—MANUFACTURERS OF—
SHEET IRON & STEEL PIPE
FOR TOWN WATER WORKS.
Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.
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Iron out, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with Asphaltum.

THE Improved United States Separator

Continues to Excel the DeLaval in Wisconsin the Same as It Does in the Other States.

North Freedom, Wis., Jan. 21st, 1901.

A few weeks ago I decided to purchase a cream separator for use upon my farm. I had heard both the United States and the DeLaval machines highly recommended, so I decided to try both before buying. * * *

Friday, Jan. 18th, all hands were present, the DeLaval Local Agents and also the State Agent, while the U. S. man was alone and a stranger in the crowd.

The DeLaval Agents had laid considerable stress upon the fact that their machine could do much better work than the U. S., and especially when skimming cold milk at a temperature of 68 degrees, or when running at low speed; so we decided to test the machines on these points, as well as on milk at normal temperature. The following is the result of these tests:

Separator.	Actual capacity.	Speed.	Temperature.	Cream Test.	Skimmilk Test.
Test No. 1. Normal Temperature. Regular Speed.					
U. S. No. 5	450 lbs.	50	80°	36%	.025
Alpha No. 2	405 lbs.	45	85°	27%	.04
Test No. 2. Normal Temperature. Low Speed.					
U. S. No. 5	450 lbs.	42	83°	36%	.04
Alpha No. 2	405 lbs.	38	86°	27%	05
Test No. 3. Cold Milk. Regular Speed.					
U. S. No. 5	450 lbs.	50	68°	30%	.05
Alpha No. 2	405 lbs.	45	68°	22½%	.05

The machines used were both $125.00 machines, therefore the results speak for themselves. The U. S. with all the conditions against it, running a much larger capacity and a much heavier cream, and in the first test with the milk 5° colder than the Baby, proved superior in every test.

A GREAT VICTORY FOR THE U. S., especially so as the test was run according to the wishes of the DeLaval representative. J. T. Donaghey.

Prospective buyers can draw but one conclusion from the above, namely:

THE BEST SEPARATOR ON THE MARKET IN EVERY SENSE OF THE WORD IS

The Improved United States Cream Separator.

VERMONT FARM MACHINE CO., BELLOWS FALLS, VT.

198.

Agricultural Review.

ALAMEDA.

SHIPPING HAY EAST FOR RACE HORSES.—Livermore Herald: The Livermore Warehouse Company has consigned a carload of hay to Hon. W. C. Whitney, ex-Secretary of the Navy, for the use of his racing stable at Lexington, Ky. For a number of years Livermore hay has been shipped in limited quantities every year to Eastern racing men; but now that its virtues are becoming better known, it is probable that the trade will reach large proportions. About eight carloads will be shipped this year to various Eastern racing men.

BUTTE.

PROFITS OF OLIVE GROWING.—Oroville Register: Some growers think that olives will not pay at the price paid per pound. We are confident that olive growing will be found profitable when the price goes much lower than it is now. If one estimates olives at 2 cents per pound on the trees and only fifty trees to the acre, the owner is realizing $100 to the acre if his trees average 100 pounds each. Good-sized trees will bear from 200 to 500 pounds, and as they get older the amount will increase. We are sure olives will pay at ½ cent a pound in the years to come, when the trees are larger and in full bearing.

DUCKS ON GRAIN FIELDS.—Biggs Argus: Some of the adobe farmers find it more difficult to protect their growing grain from wild ducks than from wild geese, owing to the fact that the ducks light on the grain fields in great bands at night, and are not so easily driven away by shooting as are geese. On the Balfour-Guthrie ranch, of which Wm. Grant is superintendent, thousands of ducks have been feeding on the growing grain every night lately, while the geese have been frightened away by the goose herders by occasional shots among them. The ducks, however, are not easily seen at night, fly a short distance at the report of a gun and light again in the same field.

FRESNO.

HORSES SUFFERING FROM A RARE DISEASE.—Fresno Republican: Dr. Turner, the new County Veterinarian, has detected the appearance in this county of a somewhat rare disease, affecting horses and mules, and his diagnosis has been confirmed by one of the foremost veterinary bacteriologists in San Francisco. Dr. Turner says the infection exists in a very virulent form of the Leptus autumnalis, a form of trombidæ. For treatment he suggests liberal washing with hot antiseptic soap water every two or three hours and a liberal application of a 1% solution of carbolic acid or lysol in sweet oil. The microbe may be found in the grass and brush and is usually communicated by contact from one animal to another.

RATES OF ASSESSMENT FOR LIVE STOCK AND GRAIN.—Fresno Republican: The county assessors of the San Joaquin valley met at Fresno to agree upon a common rate of assessment for live stock and grain. Uniform rates were agreed upon as follows: Range horses, $10 to $15; average work horses, $25 to $30; average mules, $35; American cows, $25; graded cows, $35; average stock cattle, $15; beef cattle, $25; calves, $5 to $10; sheep—fat wethers, $3; ewes and stock sheep, $2; lambs, 75 cents; bucks, $5; hogs, $3 per 100 pounds. Uniform rates for grain were discussed and conditionally adopted, the secretary to obtain from market sources figures to correct the proportion of the rates. They were as follows: Wheat, $10; barley, $8; rye, $8; corn, $12; grain hay, $5; alfalfa, $3. The assessment on bees was fixed at $3 a stand.

GLENN.

LAND SELLING.—Willows Journal: Several sales of small tracts of the Glenn Rancho have recently been made. G. W. Troxel has purchased 27 acres; J. D. Dawer, 40 acres; T. H. Newsom, 113½ acres, and Hanson Bros., 100 acres. All of this land is on the river, about 2 miles south of Jacinto. P. O. Eihe, who is selling the land for the Glenn estate, says a number of people in Willows are talking of purchasing small tracts of the big ranch.

LAKE.

TOBACCO GROWING IN LAKE.—Lakeport Bee: C. V. Engelman, a San Francisco tobacconist, says this neighborhood is well adapted to the culture of tobacco and is anxious to see our people take it up. He is conferring with a number of the local farmers in regard to the matter, and offers, if they will put out 1000 to 2000 plants, to build a curing house in Lakeport and see that the tobacco is properly cured. In addition to this, he offers to plant the seeds and furnish the young plants, ready for transplanting in the open ground. There was considerable tobacco grown in Lake county a number of years ago, and it is said to have been of excellent quality.

LOS ANGELES.

LEMONS FOR CHINA.—Los Angeles Times: I know a rancher who is engaged all these days in shipping lemons to China. The market is at Canton, and the fruit is sent out from San Francisco by the regular steamers. It was a new experience to talk with a man who is selling his fruit regularly and profitably, after its having half girdled the globe on its way to the consumer. The grower told me he received an average of $3 per box since the initial shipment was made—the first of last March. Advices from the receiver of these lemons at Canton state that they are smoother, juicier and thinner skinned than the Italian fruit received at Canton. They further state that there was only one competitor in the market—an Italian dealer. This indicates the undeveloped condition of the Oriental trade and the ignorance of the market demands of the Chinese ports.

SAN MATEO.

A FORTUNE PAID IN RENT.—Half Moon Bay Advocate: Mr. Nash is about to surrender his lease of the Henderson ranch at Ravenswood, consisting of 400 acres, of which he has been the occupant for twenty-four years. In that period he has paid the large sum of $48,000 in rents—a greater amount than the property sold for a few years ago. The lease passes to Frank Cooley, who will assume possession next fall and conduct a dairy thereon, paying a rental of $2500 per annum.

SANTA CLARA.

CANNED FRUIT OUTPUT.—San Jose Mercury: Last season the San Jose branch of the California Fruit Canners' Association packed something like 375,000 cases, and for the present this concern will make preparations for the season's canning on that basis. Should 1901 prove a good year in fruit production in this neighborhood, this cannery may pack half a million cases. This will mean the employment of upwards of 1000 hands during the season of preparing and canning the various fruits.

ARTESIAN WELLS REVIVING.—Gilroy Advocate: The artesian wells of the valley are again sending off large streams of water. After the three dry seasons many wells ceased to flow or else gave off but little water. From the volume of water they now give it is evident that the underground reservoirs are again filling up.

SISKIYOU.

HORSES IN THE SNOW.—Yreka Journal: Quite a number of horses were caught in the recent severe snowstorm, but we have not heard of any extensive losses, although some have died. Horses generally stay in the timber regions and try to browse as much as possible on the trees and shrubbery. They also eat each other's tails. A number have been rescued that had tails even shorter than the bobtail nags. Horses have also been left to starve by some owners and look like skeletons, for which neglect there ought to be a penalty for cruelty to animals.

HOGS AND SHEEP LIVE UNDER SNOW.—Siskiyou News: Sidney Richardson of Willow Creek was in Yreka recently and said that during the late snowstorm a hog was completely covered up and remained under the snow for thirteen days before being discovered. The animal apparently suffered no inconvenience. John Meamber of Scott valley also reports that twenty head of his sheep were in a snowbank for two weeks without food or water.

SONOMA.

BLACKBERRY PRICES.—Sebastopol Times: Mr. Barlow states that he and several other growers in this locality have been offered $50 and $55 per ton for this season's blackberry crop, the better grade for the retail trade and the others for canning purposes. He thinks that these figures will be increased before long.

A BIG SALE OF HAY.—Petaluma Argus: One of the biggest hay deals in the history of the county was consummated at Petaluma a few days ago, when G. P. McNear bought all of the 1899 crop of oat and wheat hay on the Fair ranch. There are 2800 tons of the hay, 2200 tons being wheat, the balance oat, and it is stored in four big warehouses. It will be shipped direct from the ranch to San Francisco, where it will be placed upon the market.

WANT TO RAISE FLAX.—Petaluma Courier: J. W. Horn has received a letter from San Francisco parties who desire to rent for cash 110 acres of land on which to raise flax. They believe it will do well here. The land must be of a good, soft, loamy soil, with an abundance of water.

STANISLAUS.

WILL GROW FLAX.—Hanford Sentinel: Selby Bros. of Oakland, who are interested in the Pacific Fiber Company of San Francisco, have purchased a large tract of land from the Mitchell estate, 3 miles east of Turlock, and will plant 110 acres in flax. Samples of the soil were submitted to Prof. Hilgard of the State University last week, and he passed a favorable opinion on the land for raising flax. The deal was then consummated and within twenty-four hours teams were at work preparing the soil for the seed.

SUTTER.

GRAFT THE WALNUTS.—Sutter County Farmer: Along the streets and roads in many parts of the county and in the farmyards can be found thousands of large black walnut trees which could be made profitable by being grafted to French or English varieties. The French walnut and several varieties of English walnuts do well here and can be successfully grown on the black walnut stock. Those who have trees should have them grafted and realize a profit from them.

ROBINS AND OLIVES.—Sutter County Farmer: Robins are quite numerous now, and, being protected by law, have become very tame. Of late these birds have been doing considerable damage to olives, and in some parts of the State the growers seriously contemplate having the law changed and a bounty offered. Although the ripe olive is very bitter, the robins eat them freely.

TEHAMA.

SHEEP WINTERED WELL.—Red Bluff News: B. A. Bell of the Gallatin ranch says the band of 10,600 head of sheep have so far wintered exceedingly well, the entire loss being only 146 head, which is about the per cent of loss from natural causes.

GRAFTING OLIVES.—Red Bluff News: General N. P. Chipman has a force of men employed grafting the Mission olive onto the Picholine. About forty acres will be grafted. The Picholine is an olive from which the oil is prepared, and the Mission is the tree from which the fruit is used for pickling.

TULARE.

PRUNING VINES. — Tulare Register: An experienced grower of vines expressed the opinion that it would be a good thing if growers would go through their vineyards with light cultivators and so keep the weeds down that pruning can be put off until April, if possible. This will do better than to prune now and have the vines bleeding all winter, which is an injury. Moreover, if the vines are left unpruned, they will start out at the ends of the canes, which can afterwards be clipped off close to the stump, and danger from frost will be nearly eliminated.

BACK TO STOCK.—Tulare Register, Feb. 8: The plains of Tulare and Kern were once a vast stock range and they have recently been going back to that condition to a considerable extent. Jas. McDermont now has the Lamberson ranch, the old Creighton field, the semi-tropic paradise of General Walter Turnbull—30,000 acres in all under fence and devoted to stock, on which he keeps 2000 to 5000 head of cattle to be made ready for the San Francisco market. On the Lamberson place are some 300 acres of alfalfa, and a good deal of hay is put up every year for the fat cattle and to tide over a dry period; but the natural feed is the chief dependence, which is good this year. While this is not peopling the country as was originally intended, the land is doing better service that way than would have been possible with dry farming. More of our cheaper and drier lands are destined to a similar end. Where water can be had, better results can be attained; but where it can not, except in some localities nearer the mountains, the sooner it is given up to pasturage the better.

PLANTING COTTONWOODS. — Visalia Delta: Up in the Alta district farmers are setting cottonwoods along the ditch banks so as to have firewood after awhile. The cottonwood is a thrifty tree and will seed the whole country in a short time. Most people consider this tree a nuisance.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

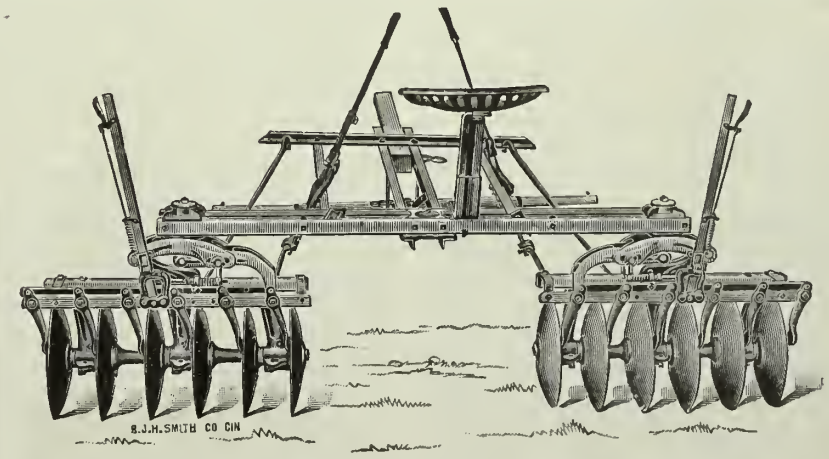
THE LAWRENCE-WILLIAMS CO., Cleveland O

OSBORNE COLUMBIA DISC HARROW.

Reversible,::::::: Extension Head, Flexible Gangs, Double Lever,:::

All Features Combined in One Harrow.

GEARS CAN BE SET AT ANY ANGLE.



Osborne Spring Tooth SULKY Harrow.::::::

Osborne Spring Tooth REGULAR Harrow.

Osborne Peg Tooth Lever Harrow.::::::::::::

The BEST line of Harrows that are used by the BEST Orchardists in California.

WRITE FOR CATALOGUE AND LEARN MORE ABOUT THESE TOOLS. ADDRESS

D. M. OSBORNE & CO.,

13 & 15 Main Street,

Factory: AUBURN, N. Y., U. S. A. SAN FRANCISCO, CAL.

THE HOME CIRCLE.

Reveries of an Apple.

My cheeks are plump, my glowing skin
Is flecked with red and yellow dapple,
And lofty hopes arise within,—
I am a most ambitious apple.

Shall I, puffed up and high of heart
With pride I feel, but may not utter,
Rise glorious into regal tart,
Or sink in shame in apple butter?

Shall I in rare roast goose's train
As dainty sauce bid joy betide her,
Or by some churlish rustic swain
Be sucked up through a straw as cider?

Alas! the pretty hopes were spoiled
Which used its reveries to sweeten;
'Twas in a vulgar dumpling boiled,
And in a dumping it was eaten.

—Henry Moore.

Landis, the College Bred.

This is the story of a youth whom fate handled very untenderly on purpose. All the things which happened to the youth before he joined his regiment in the Philippines were told to me by my good friend Dulin. And then one hard, long day on the march, way down in the Laguna country of Lower Luzon, I saw the crisis of a disease which was strong within him.

In the first place, the father wore old clothes in order that he might send his son larger checks. The latter was in college, and it seemed as if this particular college had an insatiable appetite for checks. Not that there was any such appetite displayed for erudition, but there was a "den" to be furnished with a lavish profusion of rugs, pictures and pillows; and there were hosts of girls who gladly gave the boy pleasant glances for little golden trinkets which were "just dear"; for the more perishable sweets which "just melted," and for the season's costly blossoms. Other fellows who had checks thrust upon them without carrying on a correspondence both pleading and threatening—these other fellows furnished their "dens" and gave away things to the girls and so—and so the old father at home starved and wore his old clothes.

Once in the great, new wisdom which the college had taught him the boy wrote home these words: "One thing I have learned at college, father (and a little knowledge of this kind is good for every boy), I have learned to be generous with my friends." The old man read these words, smiled sadly and toiled on.

So the boy was educated for three years. Then the father fell very ill and tears blinded his eyes when he wrote that he was no longer able to earn "checks." In less than a month the boy came home, and joy shone from the dim old eyes of the father as he stood by the gate. His face was very wan and white from illness and the same old clothes hung loosely from the waisted figure.

"My boy!" cried the old man, stretching forth his hand. His voice trembled with happiness.

"Hello, old man!" said the college-bred son, "dirty as ever I see."

The sun above did not send down a blinding flash to strike the boy to the earth; nor did a lightning bolt beat its way into his brain, only Fate drew near and took an interest in the young man's case.

He did not know his former friends when he returned from college. Sometimes in fine humor he would address them patronizingly, calling these humble creatures, who worked with their arms, "peanuts" and "lobsters," but he could not forget the superior quality of his natural formation.

He talked of the "cut" of coats, about the "block" of hats, about the "effect" of ties. He possessed morning and evening suits. He dreamed of impossible women, talked of impossible dollars, and—oh, the crime of it—he had never earned one!

Then, one morning the old man reached for the boy's hand and closed his dim old eyes for all time. When all the last things were over the boy went into the world to pick up a fortune. Two or three men who had known the father listened to the boy, pitied him, and, figuratively speaking, gave him one strenuous, conscientious kick—then forgot him absolutely. And since he could no longer sit down in a telegraph office and wait until his reply came in the shape of a check, he lost confidence in the world, instead of in himself. For three weeks or thereabouts, Fate used the boy and his fine clothing to wipe up all manner of soiled places from the city streets. Then she jabbed the colored sign of the "United States Recruiting Station" under his nose and the boy said: "I will be a captain and lead my men into battle."

You can see plainly that the college was partial in the learning it gave the youth. A recruiting sergeant growled at him and blew smoke in his face. An army doctor tore his clothes off and made him do all manner of undignified things without them. After the boy had sworn to assume the attitude of a hair on a horse's back for three years, they slapped him into a suit of clothes which had little or no "cut," and they pulled over his face a hat which had no perceptible "block." His socks did not match his shirt in the least, thereby spoiling "effect," and the shoes they dumped him into broke his heart. Then they marched him up the steep gangway of a big transport, and ordered him below to go to work. The boy looked about him and muttered, "God help me!" Then the transport sailed the sea, and Fate, very much amused and interested, arranged with Dulin and others to complete the boy's education.

In a fight at Binan, Dulin's old troop commander, who had never been a stranger to the quality of mercy, fell dead at the head of his men, shot in a place he did not feel. Then a first lieutenant, whose character had been an opaque mystery, stepped into command of the troops, and it only required one day's march to show the men who rode behind that the devil and all his angels were mounted upon the horse which the new leader rode.

A recruit joined the troop just after the fight at Binan, and he greeted the troopers in this way: "Hello, comrades!"

The veteran cavalrymen, hard from service, dark and haggard from exposure, and ugly from natural necessity, slowly turned their eyes toward the fresh, white "rookie." Then some one started a general target practice by hurling a carbine boot at the head of the new one. In the first place, "comrades" is not an army word; in the second place, the troop was in the field, where homicide is the only diversion barred; lastly, a recruit is a thing to step upon, a thing whose first month's pay belongs to anybody—an atom of no consequence, who must chew up the voice chords in his throat or get licked—who must hang, as it were, to an icicle for his life, and grin meantime.

"I'm a college man," shrieked the recruit, and all the hope I had for him died with his words. Far better might he have explained to a bunch of Filipino bolomen that he was a member of certain Greek letter fraternities. The stuff out of which troopers are molded is as evident in the hulking farmer's boy as it is in the erudite college youth, and the chances are that the farmer will harbor no fatal notions in his dim wit chamber. Never in the three years which were to follow could the fellow-troopers of Private Landis forget those words in his time of trouble: "I'm a college man."

In the afternoon Trooper Dulin took hold of the boy. He was informed, through some mysterious means, concerning the recuit's college past, which has been written. Dulin winked at me and addressed the following to the boy: "You seem like a bright, capable man," Dulin could be fatally engaging when he wished. The recruit acknowledged that he was glad to be appreciated, and my good friend continued seriously: "There is going to be a vacancy for the rank of lieutenant-colonel in this regiment in a few days. I advise you to apply for that vacancy now. Go over to headquarters and tell them who you are—that big shack with a flag hanging out of the window."

Ten minutes after the troopers standing about heard the officers raise a yell in headquarters. A moment later Private Landis was ushered out on a running jump, and an armed sentry followed after him. Three days and nights we rested in Binan. In those three days the new private did a trick of guard duty for almost every man in the troop. He accepted this harsh excess of duty with a quivering under lip. It was insufficient to make him forget that he had been to college. The realization that he was superior to all other officers and men did not leave him. Where he might have made a friend he fell flat, not knowing the trick. Self was still the shrine he worshipped, and every trooper in the command itched to kick it out of him.

"Great God," said Dulin, solemnly, "give us a fight for this fool's sake!"

The troop was ordered south at dawn on the fourth day. A party of natives had crossed the trail in front. Private Landis approached the lieutenant, who was now in command of the troop. Landis had not yet learned the wisdom of saluting a superior officer. He whimpered:

"I don't want to go out with you. I've had to do too much, and am tired. Besides, the horse you gave me isn't fit to ride——"

The troopers standing by held their breath and looked for instant murder. The troop commander turned his horse's head a little closer to the recruit. Then he leaned over in the saddle. Landis looked up, wonderingly. A second afterward we saw the clash of a clinched fist. The whining voice of Landis stopped, and he was stiff upon the ground. "I don't like your new troop commander, Dulin," I said.

"The big trooper put his hand warningly to his lips.

"Chug this thing up into the saddle. you men," the lieutenant ordered, pointing to the prone figure of Landis, the college bred. "Form twos—forward!"

The troop pulled out of Binan, and when I looked back I saw Landis leaning forward in the saddle, clinging to the mane of his mount with both hands. His forehead was black and swollen, and I fancied that with the dazed look in his eyes there was something of horried realization. Dulin was riding beside him in the rear set.

Four hours later and we were in the horrid thrall of the midday sun. The tingle of the heat was in every man's scalp, and this tingle makes one forget to swear. A trooper in the front ranks swayed in the saddle. The man riding beside him suggested to the lieutenant that the troop pause for a moment to allow the sick man's head to cool. The reply was a cut of the officer's riding whip. I was riding near Dulin at the time, and I heard his teeth shut together with a snap. His mount was the roughest horse in the troop. His khaki trousers were sticky with blood, and upon his face the look of a man whose God had turned from him and whose world holds naught but hate.

Once I saw a cornered fox face a pack of hounds and fight its way to death. Strangely enough, I remembered this fox when I looked at the bruised face of Landis, the college bred. I had not thought that his nature could hold a fight. Since I had learned his college story he had appeared only detestable, and no thought of pity for him had come to me. But now I saw a savage strain in his white, tense jaw, and a dull glitter in his eyes, which my imagination translated into murder. Could it be possible that the pamperings of a weakly good father had concealed for twenty years a devil or a hero in this boy's nature? Meanwhile, hard and unkillable as I was physically, from my many and tough "hykes" with Dulin, the hot heaven was making a fool of me, and my saddle seemed full of spikes.

And there were murmurings in the troop. Had the leader been sane he would have halted for a moment's cooling. White men are not built to push for hours over a violent trail, through the awful heat of a Luzon midday. We had been fired upon at intervals from both sides of the trail, and it was easy to see that there were more "niggers" behind than in front of the column. We were carrying three wounded, and every horse was spent and staggering. There was too much of the riding whip about this new troop commander, and in the faces of the troopers who followed there was that dreadful thing, mutiny. It was four hours past noon when Private Landis pulled his ugly beast up short.

BRONCHITIS

may mean a mere cold or a chronic incurable inflammation of wind-pipes.

The quickest relief, for a cold, is also the most effectual balm for the worst condition of wind-pipes and lungs.

It takes the edge off a cold in a night, and relieves it progressively—one forgets it after a little.

An old bronchitis, however, is obstinate. Nothing restores the tissues, when once destroyed; and an old bronchitis has gradually impared and partly destroyed the lining of those small pipes between throat and lungs.

Scott's emulsion of cod-liver oil is the balm; it sooths if it cannot restore.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

GLENN RANCH,

Glenn County, : : : : California,

FOR SALE

In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

ATTENTION!

To close out, I offer for sale all my VINEYARDS and CITRUS LANDS, ALFALFA and STOCK RANCHES, OIL lands, HORSES and MULES (single or in carload lots). All must be sold. Call on or address

L. F. WARD, 537 So. F St., Fresno, Cal.

Raisin and Fruit Land.

We are exclusive agents for 25,000 Acres of Choice Land in Fresno County.

For information in regard to any kind of land, write

SELMA LAND CO., SELMA, CAL.

and in a voice which held no whine or whimper, cursed the leader of his troop.

This pampered child was a fright to look upon at that moment. The world was his foe, and he was ready to fight the world. The worm had grown into a cobra.

"Troop, halt!" yelled the commander. A demon was in his face and a six-shooter in his hand. The latter flashed twice, and the beast which Landis rode jumped clear from its rider. The recruit scrambled to his hands and knees. One of his limbs had been crushed by the fall, and one cheek was torn from a bullet. I could but think of a wounded animal when I saw the college bred crawl toward the officer who held a smoking pistol in his hand. Landis was past pain or fear. He could only hate.

I shut my eyes, for the lieutenant raised his gun once more. A shot was fired, and when I looked again I could not understand for a moment, for the officer who had used his riding whip was twitching upon the ground, and a trooper who had ridden in the front ranks all that day was replacing his six-shooter in its holster. Suddenly it all flashed over me—the meaning of all this—for I saw an angry red welt, such as a riding whip makes across the face of the trooper whose gun had one empty chamber.

I have forgotten forever that trooper's name. I have forgotten his horse, his face—so has Dulin—so have the others.

"Oh, why didn't you let me kill him?"

These were the words of Landis, the college bred youth. He had crawled to the place where the troop commander lay upon the trail. Then, because much blood had gone from him, he fainted.

"The rookie is taking a course of higher education," Dulin observed, as he wound a bandage about the torn face of the ex-collegian. "Shouldn't wonder if he would be fit to soldier when he gets out of the hospital."

For my part, I had little doubt, because a man who can hate with a whole heart, forgetting pain, disregarding fear—a man who dares to approach an armed enemy, bearing with him only the weapons which God gave him—well, such a man has got a clean corner in him. And I have great confidence in the higher education of a harsh campaign in ungodly Luzon.

An hour later we were carrying our dead and wounded back toward Binan through the fast falling twilight. Some Tagal in the jungle sent a Remington slug whirring over our heads. Then I heard the trooper (whose name I have forgotten) say: "Queer, how many commissioned officers the niggers are picking off these days."

"If the commissioned officer who was picked off to-day hadn't been a fool and a devil," replied my good friend Dulin, "I'd see you hang."—Will Levington Comfort, in Globe-Democrat.

Medicinal Value of Salt.

Salt is such a common article in the household that many of us do not sufficiently appreciate it as being of a high medicinal value. Many and various are the remedial uses to which it may be put, and the free use of salt goes far to preserving health in the home. As a dentrifice common salt may be relied on. By its judicious use the teeth are kept white, gums hard and the breath sweet. When the gums are spongy the mouth should be washed out twice a day with salt and water. Warm salt and water, held in the mouth, will sometimes banish toothache, and at least make the affliction ligher, while it is both safe and easy to try.

Again, equal parts of alum and salt, or even salt alone, placed on a piece of cotton wool and inserted in the hollow of an aching tooth, will often give relief when other means have failed. To allay neuralgic pains in the head and face take a small bag of flannel, fill with salt, heat thoroughly and apply to the affected part. A bag of salt placed hot to the feet or any portion of the body is better for giving and keeping warmth than is the conventional brick or hot water bottle. Salt placed on the gum when the tooth has been extracted will prevent profuse bleeding at such a time. An excellent gargle for the throat is simple salt and water. Many serious cases of throat affection might be cured by the use of this alone, if only taken in time, gargling every hour or half hour, as the need warrants. A flannel cloth wrung out of salt water is also an excellent remedy for simple sore throat. Salt in tepid water is a handy emetic; as an antidote for the poison silver nitrate or lunar caustic give salt and water freely. For poisoning by alcohol an emetic of warm salt and water should be given and repeated often. — Philadelphia Times.

Queer Fancies in Cuba.

A belief that has a strong hold on a certain class of people in Cuba is that certain diseases can be cured by eating dirt; and so when one of these diseases manifests itself the believer does not consult a physician, but instead gathers up a handful of dirt and eats it. If any relief is obtained it must be the result of faith cure which the patient is unconsciously trying. Why all kinds of germs are not taken in with the dirt is a mystery—possibly they are.

The moonlight seems particularly objectionable, and strangers are warned not to go out in it with uncovered heads, and not to go out in it at all if it can be avoided; it is thought that this light brings many evil effects, not under any circumstances will a Cuban sleep under its rays—he thinks that, among other things it will draw his mouth to one side of his face.

To ward off sickness of various kinds there are little silver or tin images to wear suspended about the neck as a kind of charm. Images of the same kind are offered in the churches as thanksgiving or prayer, and so we find near the altars of certain churches cases in which are hundreds of these little trinkets.

The hooting of an owl is taken as a very bad sign. The superstitious Cuban kills any creature of this kind which makes weird sounds near the home. This is supposed to break the spell, and it is not then inevitable that a member of his family shall meet death in the near future. Butterflies also are looked upon as omens.

The Cuban women are great believers in the efficacy of various herbs in sickness, and have a remedy for almost every ailment. American physicians find they have much more knowledge in this line than the women of our own country, and more knowledge of sickness in general. In many homes, even the poorest, there is a thermometer, and if any one is ill the temperature is taken before the physician arrives.—New York Sun.

A school board inspector once asked a class of children if any of them could tell him what an epidemic was. No answer. "Well, let me prompt you. An epidemic is anything that spreads. Now, what's an epidemic?" "Jam, sir," replied a boy, promptly.—Brooklyn Life.

DOMESTIC ECONOMY.

Various Methods in Which Prunes May Be Used.

NUMBER I.

SILVER PRUNE PICKLE.—To one pint of good cider vinegar add three pounds of sugar, one stick of cinnamon, two blades of mace, teaspoonful of cloves and one-half teaspoonful of whole allspice. Boil all together until the syrup is clear. Have ready seven pounds of Silver prunes in a stone jar, pour the mixture over them boiling hot, and let stand twenty-four hours. Pour off the syrup, boil and pour over the fruit, let it stand one or two days, boil down and skim, put the prunes in the syrup and cook until clear. Then seal in jars as canned fruit. Delicious.

PFLAUMEN SUPPE (Prune Soup).—A favorite German dish. One and one-half pounds of prunes soaked over night in two quarts of water; cook very slowly two or three hours in the same water in which they were soaked, adding one Sicily lemon sliced very thin, and one stick of cinnamon. One-hour before serving add four tablespoonfuls of sago, sweeten to taste (very little sugar will be required), and add water sufficient to make two quarts when served. Do not stir while cooking, as the prunes should remain whole.

PRUNADA SNOW PUDDING.—One-half cup prunada, one cup boiling water, one cup sugar, two lemons (juice), one-half box gelatine, two eggs (whites). Soak gelatine in one cup of cold water until dissolved. Pour over it the boiling water, add prunada and sugar, boil together two minutes, add lemon juice, strain and set aside to cool. When stiff, add beaten whites and beat from twenty to thirty minutes.

PRUNE PUDDING.—One and one-half pounds prunes soaked over night, cook slowly in same water until tender; strain through a colander, add one-half cup sugar and a little lemon extract. Beat the white of four eggs to stiff froth, stir in lightly. Pour into a well-buttered pudding dish and bake about twenty minutes. Serve with whipped cream.

PFLAUMEN KUCHER (Prune Cake).—Two cups raised bread dough, one cup sugar, one-third cup shortening. Mix well and roll out one-half inch thick. Lay in a well-buttered pan. When very light, cover the dough with a layer of stewed prunes, halved and with the skin side down, sprinkle lightly with sugar and cinnamon and bake about fifteen minutes.

PRUNADA ICE.—One pint prunada, three pints of water, three cups of sugar, five lemons (juice), two tablespoonfuls corn starch, two eggs (whites). Boil together suger and water, thicken with corn starch, and when cool add prunada and juice of lemons. When partly frozen, add the beaten whites of eggs. This quantity makes one gallon of ice.

PRUNADA PUDDING. — Two tablespoonfuls prunada, two tablespoonfuls water, one cup sugar, one egg (white). Boil prunada, water and egg until it "threads" from the spoon. Have ready the beaten white of the egg, over which pour the boiling syrup, beating constantly until cold.

(TO BE CONTINUED.)

Keeping Smoked Meats.

TO THE EDITOR:—Can you give me any information as to the best method of keeping bacon and hams after smoking? My experience with packing in grain, hay, etc., is that it moulds badly.—SUBSCRIBER, Napa.

[Some reader can no doubt give good advice on this point. We shall be glad to have it.—ED.]

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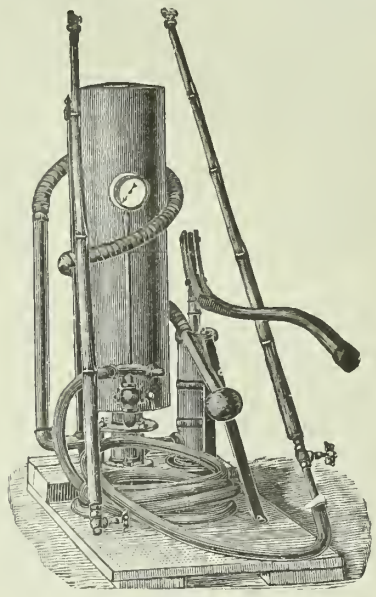
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 20, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	Feb.	May.
Wednesday	—@—	79⅝@80½
Thursday	—@—	80¾@80⅞
Friday	—@—	80¼@79⅞
Saturday	—@—	79¾@80
Monday	—@—	80¼@79⅝
Tuesday	—@—	79⅝@80

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	5s 11¼d	5s 11⅞d
Thursday	5s 11¾d	6s 0¼d
Friday	5s 11⅝d	6s 0¼d
Saturday	5s 11½d	5s 11¾d
Monday	5s 11⅜d	6s 0 d
Tuesday	5s 11¼d	5s 11¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 01⅛@1 00⅝	1 05¾@1 04¾
Friday	1 00⅞@1 00¾	1 05 @1 05⅛
Saturday	1 01 @1 00⅝	1 05⅛@1 05⅛
Monday	1 00⅛@ 99⅞	1 04⅝@1 04⅛
Tuesday	98⅞@ 98¼	1 03¾@1 03⅝
Wednesday	——@——	——@——

WHEAT.

The local wheat market has not displayed much life the current week, so far as actual trading is concerned. Shippers were more anxious to reduce than to increase holdings, and to this end sent several cargoes afloat, including one of 5680 tons, valued at $110,700, which was cleared for St. Vincent for orders. Shipments of wheat from other ports were large, the aggregate for this week being 1,376,000 bushels, or nearly double the quantity for preceding week, which footed up only 776,000 bushels. Crop conditions continue first-class in this State, and are in the main favorable for a good yield in other parts of the world, although some damage was reported in the upper provinces of India. It was also stated that the quality of the Argentine wheat was falling off. There was no improvement here, however, in prices obtainable. A considerable proportion of the wheat now going aboard ship from this port is for west coast of South America, one of the latest wheat charters being of a handy iron ship at £1 11s 3d for Valparaiso or Iquique direct. Wheat charters for Europe are quotable at about £1 18s per long ton, or close to 45c per cental, the rate having fluctuated very little for several months past.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as fellows for the options named:

May, 1901, delivery, $1.01⅛@98⅞c.

December, 1901, delivery, $1.05¾@1.03⅜.

Wednesday, at regular neon session of Call Board, May, 1901, wheat sold at 98⅞@98⅛c; December, 1901, $1.03¾@1.03⅜.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	95	@ 96¼
Oregon Valley	95	@1 00
Washington Blue Stem	95	@1 02½
Washington Club	95	@1 00
Off qualities wheat	90	@ 92½

Ocean freights and prices for wheat, as compared with a year ago, are as fellows:

	1899-1900.	1900-01.
Liv. quotations	6s4½d@6s5d	6s3½d@6s4d
Freight rates	37@38¾s	37½@38¾s
Local market	$1 00@1 02½	$0 95@0 97½

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Business is slow in this article at present, and market inclines in favor of the consumer, although in the matter of quotable rates there are no changes to record. Local buyers have been lately operating as lightly as possible, and it is the exception where consumers are carrying other than very small stocks.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

This cereal is moving outward in fairly liberal quantity for this late date, both by sea and rail, but the supply continues more than ample for the requirements, and in the matter of values the market has developed no quotable improvement. In fact, for common qualities or feed descriptions, depending almost wholly on local custom for an outlet, lack of firmness has been fully as pronounced as for some time past. Values for choice to select, or for shipping grades, were fairly well maintained at the quoted range. The British ship Manx King, clearing this week for the United Kingdom, took as part cargo 47,165 centals barley.

Feed, No. 1 to choice	72½@ 75
Feed, fair to good	70 @ 72½
Brewing, No. 1 to choice	80 @ 85
Chevalier, No. 1 to choice	97½@1 02½
Chevalier, No. 2	85 @ 90
Chevalier, poor	70 @ 75

OATS.

Offerings are light from all quarters, the rather stiff prices lately current failing to draw forth heavy consignments of oats of any description, demonstrating clearly that stocks of this cereal at most Pacific coast producing points must be of quite limited volume. Eastern oats are arriving in moderate quantity, being brought out by parties having contracts with the Government.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 32½@1 40
White, poor to fair	1 20 @1 27½
Gray, common to choice	1 20 @1 37½
Milling	1 45 @1 50
Surprise, good to choice	1 45 @1 55
Black Russian	1 15 @1 35
Red	1 20 @1 45

CORN.

Values remain in about same position as at date of last review, with trade by no means brisk, but market fairly steady for best qualities at the prevailing rates. Spot supplies of both Large Yellow and White are mainly Eastern product. Domestic Small Yellow is in very scanty stock.

Large White, good to choice	1 15 @1 17½
Large Yellow	1 15 @1 17½
Small Yellow	1 50 @——
Eastern, in bulk (carload lots)	1 08 @1 10

RYE.

There is no inquiry at present worth mentioning, and market is unfavorable to sellers.

Good to choice, new	82½@ 85

BUCKWHEAT.

Stocks are small and firmly held, being mostly in the hands of local millers.

Good to choice	2 00 @2 10

BEANS.

The market is decidedly quiet, so much so that holders of high-priced stock are feeling just a little uneasy, and would prefer having coin instead of beans, provided, of course, they could realize the figures they are asking. Prices may go higher, but most of the present holders are willing to let some one else rake in the balance of the profit. One thing is certain, if values do go higher, the demand will be correspondingly slower. Even at present rates for white beans, not many will be required to satisfy the demand during the balance of the season. Colored beans are in fair supply, particularly Pinks and Bayos, and are offering at much lower figures than whites, but are not receiving much attention at present.

Pea, fair to good, 100 lbs	—— @——
Small White, good to choice	4 75 @4 90
Lady Washington	4 10 @4 25
Butter	4 25 @4 50
Pinks	2 15 @2 30
Bayos, good to choice	2 65 @2 75
Reds	3 00 @3 25
Red Kidney	4 00 @4 25
Limas, good to choice	5 65 @5 75
Black-eye Beans	2 75 @3 00
Horse Beans	1 75 @2 00
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

Hardly enough doing to enable giving quotations. The tone of the market is firm for Green and weak for Niles.

Green Peas, California	2 75 @2 85
Niles Peas	1 75 @1 90

WOOL.

While it would be much more agreeable to report the market otherwise, a strict regard for the truth compels the statement that at no time the current season has the wool trade in this center been duller than at present. Regarding the future, those in close touch with the market are wholly at sea. It is believed, however, that the coming clip in this State, on account of promising to be exceptionally desirable, will receive early attention, despite the fact that stocks of old wool throughout the country are heavy.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @11
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

There is little doing in this line, and so far as stocks in the hands of growers are concerned, there is little to operate upon. Jobbers and brewers are carrying fairly liberal stocks. No large quantities could be placed at or near full current rates. Jobbers are, however, quoting through the daily papers the figures they are asking and not the prices they are willing to pay.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

The hay market continued in practically the same groove as for some weeks past. Values are quotably unchanged, but market is weak, especially for other than most select qualities. There is no probability of there being any shortage of supplies during the balance of the season.

Wheat	8 00@12 50
Wheat and Oat	8 00@11 50
Oat	7 00@11 50
Barley	6 00@ 9 50
Volunteer	5 00@ 7 00
Alfalfa	8 00@ 9 50
Stock	5 00@ 7 00
Compressed	8 00@12 50
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

As most of the local flouring mills are at present running very lightly, Bran continues in limited stock, but is meeting with a stiff market. Most of the mill offal now offering in this center is from Oregon and Washington. The demand for Middlings and Shorts is not brisk. Rolled Barley is selling at rather easy figures. Milled Corn is ruling steady.

Bran, ₱ ton	15 00@16 00
Middlings	17 00@18 00
Shorts, Oregon	15 50@16 50
Barley, Rolled	16 00@16 50
Cornmeal	25 50@ ——
Cracked Corn	26 50@ ——

SEEDS.

Mustard Seed is practically out of stock. For some small holdings of Yellow 4½c. and even higher figures are asked. Alfalfa is not offering in large quantity, neither is there much demand for it at present, but in the matter of quotable rates there is no change. The little business doing in bird seed is within range of same figures previously quoted.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Some inquiry is being experienced for Grain Bags for forward delivery, with market moderately firm for Calcutta stock now en route, and asking rates a little higher than lately current. Prices for this season's output of State Prison bags will likely be about the same as last year. Wool Sacks are quotably unchanged, and are expected to soon come into request on account of Spring clip.

Calcutta Grain Bags, buyer June-July	6½@ 6⅝
Calcutta Grain Bags, spot	6½@—
San Francisco Grain Bags, 22x36, spot	6½@—
State Prison Bags in lots of 2000, ₱ 100.5 65	@—
Wool Sacks, 4 lbs	—@32½
Wool Sacks, 3½ lbs	—@28½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

The Hide market is moderately firm at prevailing rates for strictly sound stock, but is weak for culls. Pelt market is quiet at quotably unchanged figures, with offerings light and demand slow. Tallow is in fair request and values for same are steady.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	9	7
Light Steers, under 48 lbs	8	7
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	7
Wet Salted Kip	9	8
Wet Salted Veal	9	8
Wet Salted Calf	10	9
Dry Hides	15½	13½
Dry Kip and Veal, 11 to 16 lbs	15	12
Dry Calf, under 4 lbs	16 @	14
Salted Horse Hides, large	2 50 @	—
Salted Horse Hides medium	2 00 @	—
Salted Horse Hides, small	1 00 @	—
Dry Horse Hides, large	1 75 @	—
Dry Horse Hides, small	1 00 @1	50
Dry Colts' Hides	50 @	—
Pelts, long wool, ₱ skin	75 @1	00
Pelts, medium, ₱ skin	60 @	75
Pelts, short wool, ₱ skin	30 @	50
Pelts, shearling, ₱ skin	10 @	25
Deer Skins, best summer	35 @	—
Deer Skins, good medium	— @	30
Deer Skins, thin winter	— @	10
Elk Hides	10 @	12

Tallow, good quality	4 @ 4¼
Tallow, No. 2	3½@ 3¾
Goat Skins, perfect	30 @ 37½
Goat Skins, damaged	10 @ 20
Kid Skins	5 @ 10

HONEY.

Although there are no great quantities of honey on market, the demand is light. Holders are as a rule desirous of effecting a clean-up of stocks at an early day, and the market in consequence lacks firmness. Spot supplies are mainly amber grades.

Extracted, White Liquid	6½@ 7
Extracted, Light Amber	5 @ 6
Extracted, Amber	4½@ 5
White Comb, 1 lb frames	13 @14
Amber Comb	11½@12½
Dark Comb	8 @ 9

BEESWAX.

Stocks are of very small proportions and must remain so for several months or until the opening of the coming season. Quotable values are without change.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

The local market is poorly stocked with Beef and Mutton of all grades, and is firm at the quotations. Veal is in light receipt. Lamb is very scaace. Hogs are in limited supply and high, but are expected to arrive a little more freely in a few weeks, when some milk-fed stock will be ready for morket.

Beef, first quality, dressed, net ₱ lb	7¾@ 8
Beef, second quality	7½@ 7¾
Beef, third quality	6½@ 7½
Mutton—ewes, 9@9½c; wethers	9½@10
Hogs, hard grain fed, medium	6½@ 6¾
Hogs, small, fat	6⅛@ 6¼
Hogs, large, hard	5¾@ 5⅞
Hogs, feeders	5¼@ 5½
Hogs, country dressed	7½@ 8
Veal, small, ₱ lb	7 @ 9½
Veal, large, ₱ lb	7 @ 8½
Lamb, yearlings, ₱ lb	11 @—
Lamb, spring, ₱ lb	11½@12½

POULTRY.

Demand was not quite so active for poultry as during previous week, but was fairly good for choice stock, prices for same remaining close to figures last quoted. Young poultry continued in light receipt and sold to better advantage than old. Choice Fryers and Broilers were in especially good request. Turkeys inclined slightly in favor of sellers, owing to very limited arrivals of same, but not many were required to satisfy the inquiry, which was mainly for Hen Turkeys, most buyers giving Gobblers at present the go by.

Turkeys, live hens, ₱ lb	13 @ 14
Turkeys, live gobblers, ₱ lb	12 @ 13
Turkeys, Dressed, per lb	13 @ 15
Hens, California, ₱ dozen	4 00 @5 50
Roosters, old	4 00 @4 50
Roosters, young (full-grown)	5 00 @6 50
Fryers	5 00 @5 50
Broilers, large	5 00 @5 50
Broilers, small	3 50 @4 50
Ducks, old, ₱ dozen	4 00 @5 00
Ducks, young, ₱ dozen	6 00 @7 50
Geese, ₱ pair	1 50 @2 00
Goslings, ₱ pair	2 50 @2 75
Pigeons, old, ₱ dozen	1 25 @1 50
Pigeons, young	2 25 @2 50

BUTTER.

Market inclined in favor of buyers, with some tendency to accumulation of stocks, but quotable prices suffered no radical changes. Weakness was more pronounced on lower grades than on choice to select, although the proportion of common and defective qualities is not so heavy as it was a few weeks ago. Some of last season's cold storage butter is still on the market and is moving slowly at low figures.

Creamery, extras, ₱ lb	21 @—
Creamery, firsts	19 @—
Creamery, seconds	18 @—
Dairy, select	19 @—
Dairy, firsts	16 @17
Dairy, seconds	14 @—
Dairy, soft and weedy	— @—
Mixed store	10 @11
Creamery in tubs	17 @19
Pickled Roll	18 @19
Firkin, California, choice to select	17 @19
Firkin, common to fair	16 @17

CHEESE.

There are no heavy quantities of domestic product on the market, but there is a lack of firmess, buyers taking hold very slowly and only for most immediate and pressing needs. Eastern cheese is in quite limited supply and is being very steadily held.

California, fancy flat, new	10 @—
California, good to choice	9½@10
California, fair to good	9 @ 9½
California Cheddar	— @—
California, "Young Americas"	9½@10

EGGS.

Values are at a very narrow range, as all eggs now arriving are showing good quality, the only difference being in size, color and cheapness. There was a fair shipping demand, and on shipping orders store-gathered eggs were given the preference over ranch, owing to being lower

priced. Many local buyers also ran mainly on store-gathered stock.

California, select, large, white and fresh.	16 @17
California, select, irregular color & size.	15½@16½
California, good to choice store	15 @16
Eastern, as to section and grading	— @—
Eastern, cold storage	— @—

VEGETABLES.

Fresh vegetables were in a little better supply than previous week, but stocks of desirable qualities were by no means heavy. Onions were scarce, particularly sound, hard and uncut, such bringing stiff figures. Other Winter vegetables made a light showing, and it was the exceptien where prices for good to choice did not incline against buyers.

Asparagus, ℔ lb	20 @ 40
Beans, String, ℔ lb	12½@ 15
Cabbage, choice garden, ℔ 100 lbs	1 00 @1 25
Cauliflower, ℔ dozen	50 @ —
Egg Plant, ℔ lb	17½@ 20
Garlic, ℔ lb	3 @ 4
Onions, Yellow Danver, ℔ cental	3 00 @3 50
Peas, Sweet, garden, ℔ lb	6 @ 8
Peppers, Green Chile, ℔ lb	20 @ 25
Squash Summer, ℔ box	1 50 @2 00
Squash and Pumpkin, ℔ ton	20 00 @30 00
Tomatoes, ℔ crate	50 @1 25

POTATOES.

Market is liberally stocked with ordinary qualities of Burbank Seedlings, both California and Oregon product. This sort is moving slowly and at no improvement on previous rather low rates. Strictly fancy qualities are not plentiful, and such sell to advantage, moving in a small way at higher figures than quotable. Oregon Garnet Chile were offered for seed in larger quantity than the immediate demand warranted. Peerless continued in light stock and in good request for seed. Sweets were in free receipt for this late date, and offerings were more than sufficient for the demand at existing rates.

Burbanks, River, ℔ cental	30 @ 60
Burbanks, Petaluma-Tomales, ℔ ctl.	35 @ 60
Burbanks, Salinas, ℔ cental	75 @1 10
Burbanks, Oregon, lb cental	60 @1 00
Garnet Chile, ℔ cental	65 @ 75
Peerless, ℔ cental	65 @1 00
Sweet Potatoes, Yellow, ℔ cental	75 @1 00

The Fruit Market.

FRESH FRUITS.

Aside from Apples, the fresh deciduous fruit market is practically bare of offerings, and stocks of Apples have been lately dwindling down to small proportions. Strictly high grade, desirable for putting on table in a fresh state, are especially scarce, and quotations for this description are at present largely nominal. Common and defective qualities, although not offering in heavy quantity, are not eagerly sought after.

Apples, fancy, 4-tier box	1 50 @ 2 00
Apples, good to choice, ℔ 50-lb box.	75 @ 1 00
Apples, common to fair, ℔ 50-lb box.	40 @ 65

DRIED FRUITS.

The market for cured and evaporated fruits is dragging along in the same dull and featureless fashion as for some time past. The little business doing in offerings from first hands is more the result of selling pressure than of any inquiry from dealers. Jobbers are being daily called upon by numerous brokers, agents and owners, with samples of dried fruit of nearly every description other than strictly fancy. The latter sort is not being crowded on buyers to any noteworthy extent, especially fancy Apricots and fancy Pears, these being practically out of stock. Handlers have become so accustomed to being solicited to make bids, and have so much more offered them of most kinds than they have immediate need for or care to purchase, that it has come to be regarded as something in the line of a special favor when they see fit to accord a close inspection to samples and make bids somewhere near the nominal quotations current. In many cases bids are not made, or prices named are so ridiculously low as not to be worthy of consideration. How long this condition of affairs will exist cannot be stated, but so long as it does exist, producers will be only wasting their time in hunting the market for buyers at other than low and unprofitable figures. Apples are perhaps the dullest and weakest on the list, if any such distinction can be made at present. Very good evaporated Apples in boxes went this week at 3c. Pears are probably in lightest stock next to Apricots, and very good evaporated Pears in halves sold in small quantity at 3½c. While there is little doing in Prunes, non-Association stocks are now small and they are being held closer to Association prices than at any previous date this season.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½@ 6
Apricots, Royal, choice, in sacks, ℔ lb	6½@ 7
Apricots, Royal, fancy	8 @ 9
Apricots, Moorpark	9½@11
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	2½@ 3½
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, choice	4 @ 4½
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, halved, fancy.	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, White and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	4 @ 5
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	1½@ 2½
Figs, White	2½@ 3½
Peaches, unpeeled	3 @ 5
Pears, prime halves	2 @ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

In the raisin market there are no new features to note. Pacifics and seeded raisins are meeting with fair custom at the prices recently established on these descriptions, but in local stocks of standard Muscatels there is no noteworthy movement, values East being relatively lower than here.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—
(Usual advance for fractions.)	
Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Oranges were in increased receipt, and were offered more freely, both by auction and private sale, than for some weeks preceding. The demand was fair, but for other than choice to fancy the market lacked firmness, common qualities being in excessive stock. Fancy Navels sold at auction up to $2.45 per box, standard at same time selling down to $1 per box, and latter sort went subsequently at still lower figures. Lemons should be doing better on account of the scarcity of Limes, but values show no quotable improvement. Limes were in such light stock as to be obtainable only in a very small way.

Oranges—Navel, ℔ box	90@2 25
Seedlings, ℔ box	75@1 25
Tangerines, ℔ half box	1 30@1 75
Grape Fruit, ℔ box	1 00@2 00
Lemons—California, select, ℔ box	2 00@2 25
California, good to choice	1 50@1 75
California, common to fair	75@1 25
Limes—Mexican, ℔ box	—@—
California, small box	—@—

NUTS.

Market is exceedingly quiet throughout, and values for all descriptions remain quotably as last noted. Almonds are in light stock, but there is little call for them at present. Walnuts of the better grades are nearly cleaned up. Peanuts are in only moderate supply.

California Almonds, shelled	22 @25
California Almonds, paper shell, ℔ lb	12 @13
California Almonds, soft shell	9 @11
California Almonds, hard shell	6 @ 7
Walnuts, White, soft shell	7½@ 9½
Walnuts, White, California, standard	7 @ 9
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

The market continued firm, with not much offering, and the bulk of stock in few hands. Dry wines of 1900 vintage are quotable at 19@22c. per gallon, with prospects of prices ruling stiffer rather than easier before another season opens. Receipts of wine at San Francisco during the month of January were 1,984,350 gallons, and for corresponding month in preceding year were 1,360,475 gallons. There is a very fair demand, both for shipment and on local account.

California Dried Fruit at New York.

NEW YORK, Feb. 20.—Evaporated apples, common, 3¾@4¾c; prime wire tray, 5@5⅝c; choice, 5½@6c; fancy, 6@7c.

California Dried Fruits. — Market is inactive at nominally unchanged values.

Prunes, 3¼@8½c.

Apricots, Royal, 7½@12c; Moorpark, 9@15c.

Peaches, unpeeled, 6½@10c; peeled, 14@18c.

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330 Market Street, San Francisco, Cal.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING FEB. 5, 1901.

667,383.—WASHING MACHINE—R. S. Andrews, Redding, Cal.
667,180.—WELL CASING — E. J. Bates, Bakersfield, Cal.
667,645.—BAG HOLDER — A. S. Beck, Pasadena, Cal.
667,181.—WATCH POCKET—Jennie Beebe, Los Angeles, Cal.
667,186.—GAS CUT OFF—V. E. Campbell, Winnemucca, Nev.
667,293.—FLY PAPER HOLDER—Cherry & Radke, S. F.
667,294.—FLY TRAP — Cherry & Radke, S. F.
667,303.—TRAP — G. R. Evans. Fresno, Cal.
667,206.—BEER COOLER—T. R. Faughnan, Colusa, Cal.
667,511.—ARTIFICIAL LIMB — I. R. & W. D. Fenner, S. F.
667,514.—CONCENTRATOR — G. J. Frey, Oakland, Cal.
667,214.—SOLDERING IRON HEATER — J. W. Gheen, Astoria, Or.
667,397.—EDUCATIONAL APPLIANCE — F. D. Jones, Los Angeles, Cal.
667,446.—REFRIGERATOR — R. A. Maddox, Phœnix, Ariz.
667,555.—COATED SCREW — A. W. McGahan, Los Gatos, Cal.
667,367.—PRODUCING COPPER—G. Mitchell, Jerome, Ariz.
667,400.—VEHICLE WHEEL—A. S. Moore, Galt, Cal.
667,572.—PIPE WRENCH — C. Peterson, Los Banos, Cal.
667,578.—BILL HOLDER—M. C. Robichau, S. F.
667,254.—BRIQUET MACHINE—R. Schorr, S. F.
667,255.—PRODUCING CEMENT — Schubert & Pierce, Sacramento, Cal.
667,352.—FLUSHING APPARATUS — F. Walker, Los Angeles, Cal.
667,472.—FISH TRAP—Welch & Lamley, Astoria, Or.
667,415.—STAMP DIE—Frank White, Nevada City, Cal.
667,641.—HYDROCARBON BURNER—J. D. Williamson, S. F.
667,279.—NAIL MACHINE—J. H. Yeakey, Redding, Cal.

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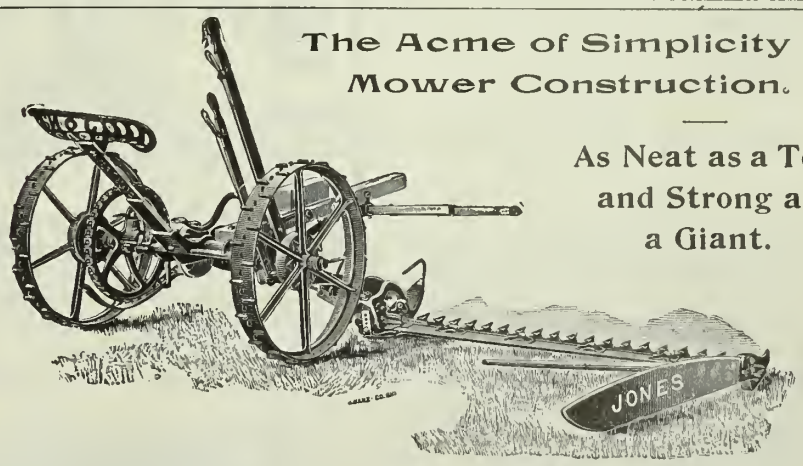

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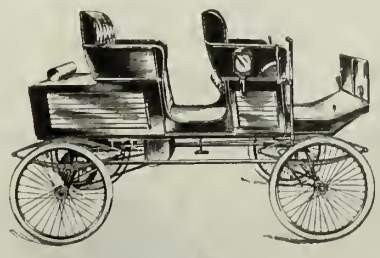
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THE DAIRY.

Cow Tests at the State Fair.

To the Editor:—In a recent number of the Pacific Rural Press, under the heading "Holstein-Friesian Sale," it is stated: "having won the first prize in the butter contest at the State Fair, both in 1898 and 1899, the best breeds of Jerseys and Durhams competing."

The above statement does not agree with the facts in the case. In 1899 there were no Shorthorns in the butter tests at the State Fair. In 1898, not being there to see, I do not know what kind nor how many cattle were in it; but I may say that the Holsteins have not always beat the Shorthorns at the California State Fair.

Not having had any cows in the butter tests for a good many years, I have to go back to 1894 and 1895 for my proofs, which are as follows for a test of three days:

Name.	Pounds Butter.
Baden Ruby 4th	4.533
Rebecca Edmunds 3rd (Holstein)	4.076
Olga of Y. B. (Jersey)	3.946
Baden Cherry 4th	3.904
Joan of Baden 2nd	3.899

In the last four animals, consisting of one Holstein, one Jersey and two Shorthorns, the produce is practically the same.

In the following year, 1895, I had two two-year-old Shorthorn heifers in the contest, viz: Bracelet 9th, who produced an equivalent of 9.924 pounds of marketable butter, which was more than that produced by any other two-year-old heifer in the test; the other was Baden Gwynne 7th, who produced 8.960 pounds, while Mr. Burke had one of the same year who produced 9.019 pounds—practically the same amount as the produce of Baden Gwynne 7th.

I may further state that none of my cows did nearly so well in quantity of milk as they had been doing at home. It was either in 1896 or 1897 that Baden Cherry 4th was giving over fifty pounds of milk per day at home. On the third day of the test at the State Fair she was giving a little over thirty pounds per day, owing to the unfavorable conditions under which the tests were made, and for that reason I determined to bring no more cows for that purpose, to be milked under like circumstances—unfair to both the cows and the breeder's reputation.

Robert Ashburner.

Lakeville, Sonoma county, Feb. 14th.

Beware of Ointments for Catarrh That Contain Mercury,

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

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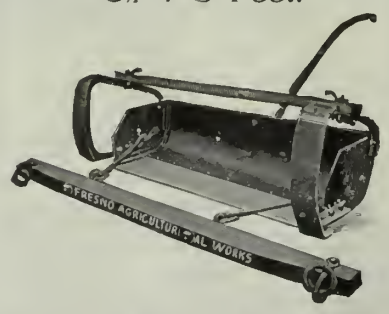

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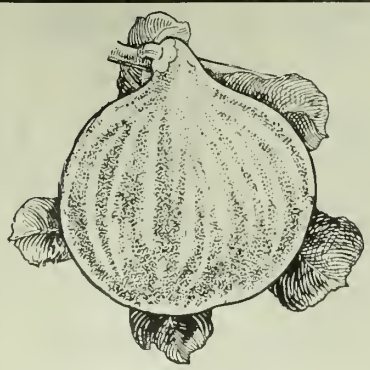

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Patrons of Husbandry.

Tulare Grange.

To THE EDITOR:—Tulare Grange convened at its hall on Saturday. The secretary read communications from U. S. Senator Perkins and Congressman Needham, to whom she had written, sending resolutions of Tulare Grange on the Grant bill and other matters now before Congress affecting farmer's interest. Both gentlemen expressed their intention of guarding the farmer's interest in the consideration of the measures spoken of.

Five applications for membership were received and referred to proper committees, to be reported on at next meeting. There being five candidates, heretofore elected, in waiting, the first and second degrees were conferred on them in an impressive manner.

Resolutions were passed favoring the appointment of an agriculturist to the office of Secretary of the State Board of Agriculture and recommending J. S. Taylor, of Napa, for the position.

The subject of co-operation in buying and selling was discussed, either by the card system or Rochdale plan, and a committee of five was appointed to investigate both and report.

A special meeting for conferring degrees will be held on Saturday, 23d.

THE VETERINARIAN.

Answers by Dr. Creely.

FOR AN OBSTUCTED TEAT.

To THE EDITOR.—I have a cow, seven years old, who has just had a calf. In one of her teats there is a lump about the size of two peas side by side. This lump is in the top of the teat and stops the flow of milk, which can be got only by milking with both hands on the same teat. Can you give me any remedy for this through the PACIFIC RURAL PRESS?—READER, Angwin, Napa county.

Treatment for this condition is very unsatisfactory. Apply iodine externally and give iodide of potash internally for several weeks; one drachm daily.

DR. E. J. CREELY,
510 Golden Gate avenue, S. F.

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A virus for destroying ground squirrels or "gophers."
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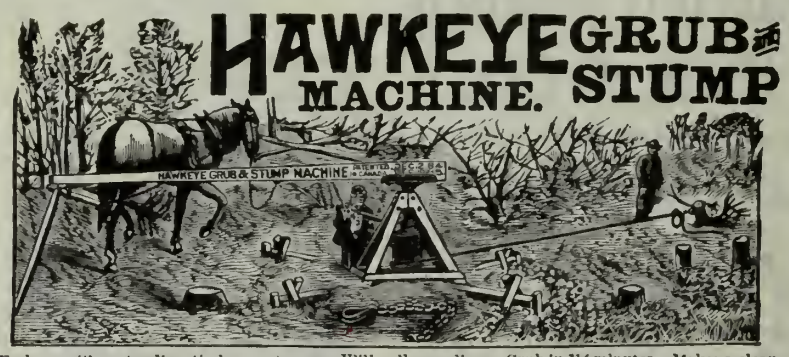

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AGRICULTURAL SCIENCE.

The Uses of Gypsum.

TO THE EDITOR:—Will you tell us how gypsum helps plant life by drawing nitrogen from the air; how it combines with manure to absorb ammonia to make a valuable fertilizer, etc. It would be of much interest.—READER, Fresno county.

Gypsum cannot draw nitrogen from the air except indirectly by stimulating the growth of a leguminous plant, and thus making its root bacteria more active in the taking of atmospheric nitrogen. If gypsum could take nitrogen from the air, it would be the biggest thing on earth; and if there were gypsum enough to take away overmuch nitrogen, the world would burn up. But gypsum has many uses, and a good account of them is given by Prof. Hilgard of the University Experiment Station as follows:

Since the favorable effects of the use of gypsum on soils tainted with "black alkali" have become known, farmers, as well as others (more particularly those interested in the development of mines of this material), have frequently applied for information as to the value of land plaster as a general fertilizer.

Since gypsum can supply to the soil only two ingredients taken up by plants as nutrients, it cannot have any direct fertilizing effect save in cases where one or both of these two ingredients—lime and sulphuric acid—are deficient. Of over 1500 California soils now in the University collection, probably not over a dozen would be at present benefited by an additional supply of lime, that ingredient being, from climatic causes, almost necessarily abundant in the soils of arid climates. As to sulphuric acid, it has not been found deficient in any soil examined; and from causes parallel to those tending to render lime abundant, it is not likely to be required as a fertilizer anywhere in California within a century. Gypsum is, therefore, a special fertilizer only, and is not to be compared to such fundamental fertilizers as the phosphates, the nitrates and, in their proper place, the potash salts, which serve to replace directly what the crops withdraw from the soil, and thus to maintain its store of plant food. The cases in which gypsum is found useful may be classed under four heads:

1. It is found efficacious in improving the thriftiness of all crops of the "leguminous" tribe—that is, peas, beans, vetches, clovers of all kinds, alfalfa, etc. The exact cause and mode of action in this case is not fully understood, but it is an old and well-established fact. At the same time it must not be expected that virgin soils already producing maximum crops will make the use of plaster pay in going still higher. Many such soils already contain all the gypsum that can be useful, and to add more would be "carrying coals to Newcastle."

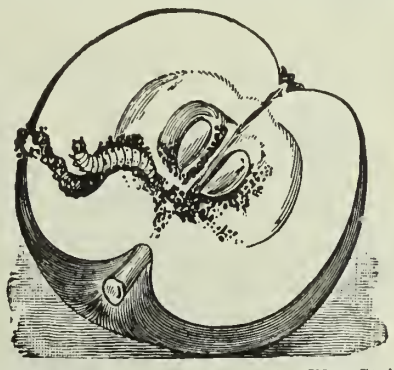
2. Among the effects known to be produced by gypsum on many, or perhaps most, soils is the setting free, or rendering available, of supplies of potash contained in the soil, but not in such a form that crops can use it. Probably this is one of the causes of its favorable effect on the legume plants. As regards California soils, the great majority are remarkable for their high contents of potash, much of which is in the soluble and therefore fully available form. Hence, this particular effect of gypsum is likely to be less useful in California and the "arid region" generally than it is in the East, where potash fertilizers are highly important and soils on an average contain one-third to one-fifth as much potash as do ours.

3. The utility of gypsum on soils afflicted with "black alkali," or carbonate of soda, is doubtless the most important use for it in California agriculture, at present and for many years to come.

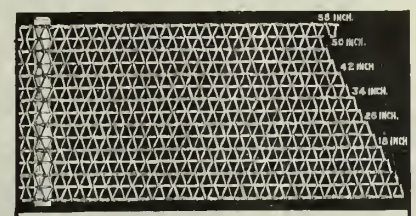
4. Gypsum is of high utility in the preservation of manure, because it absorbs and retains for plant use the carbonate of ammonia so freely given off from barnyards, stalls and manure piles under all ordinary modes of management. A box of land plaster should be conveniently to hand in every stable for use in the stalls, which it disinfects most effectually without in any manner interfering with the subsequent use of the manure, as is the case with other disinfectants now in common use, in cities especially. It is equally good in other places where offensive exhalations are apt to occur, and its free use would do away with a great deal of the unpleasantness and some unhealthfulness, now so commonly found about the farm yard and even the dwelling house.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had for the asking.



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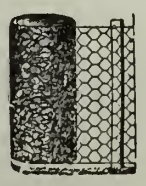

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The man who has one or two things to sell always says his is the best.

Those who carry a complete stock usually know what is best adapted to each individual requirement.

Trying to feed trees on available (*not water soluble*) phosphoric acid is like the fox who invited the crane to dine on soup from a shallow dish. The food may have been good, but it was out of reach.

Don't encourage shallow rooting by using a fertilizer that remains on the surface or near the surface of the ground and out of the reach of the feeding rootlets of the tree. For trees, use *water soluble phosphoric acid* and let it go down deep with the rain. It will save much irrigating by causing deep rooting. It costs no more and is more valuable.

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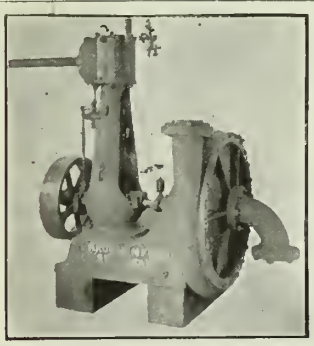

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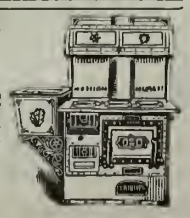

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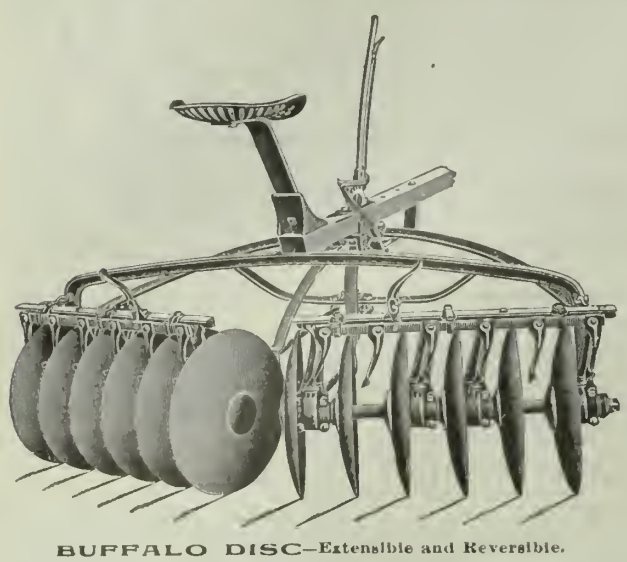

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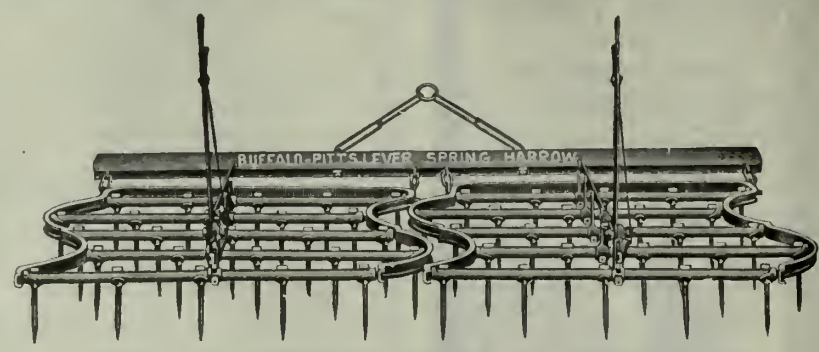

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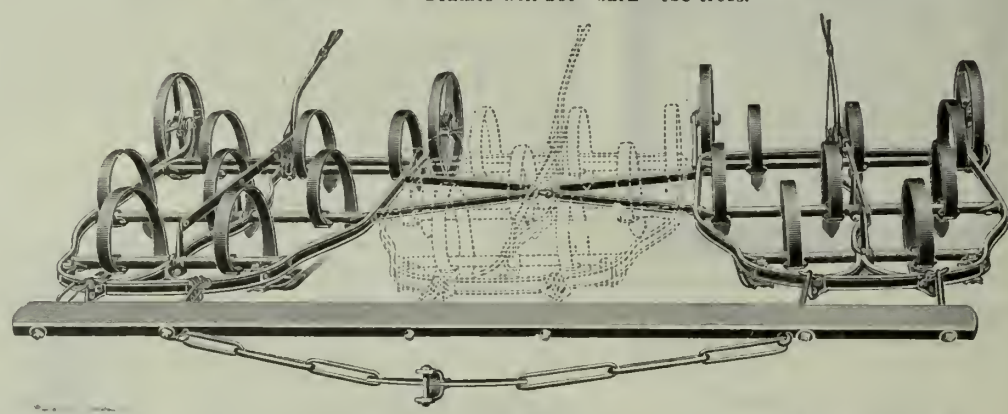

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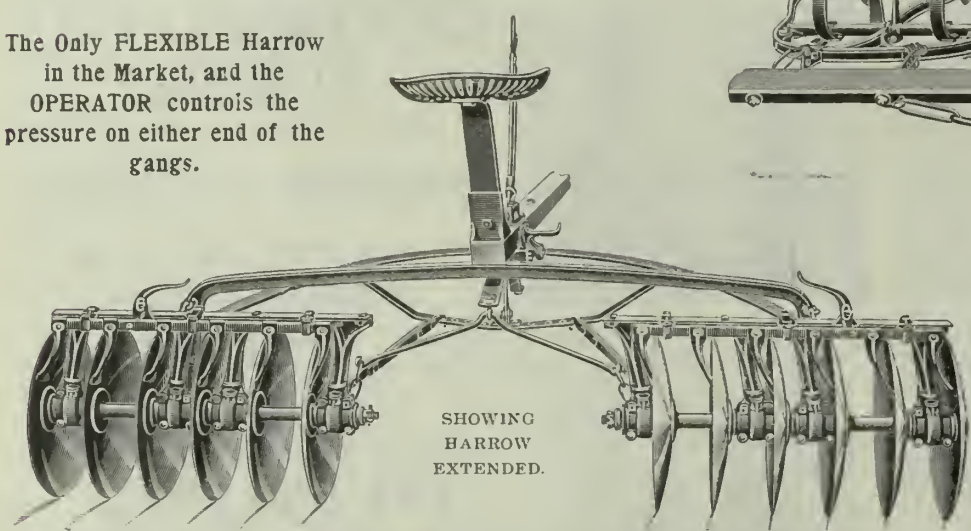

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 9. SAN FRANCISCO, SATURDAY, MARCH 2, 1901. THIRTIETH YEAR. Office, 330 Market St.

What the Tree Says for Itself.

Fruit trees speak a language which should become quite intelligible to the attentive grower and convey lessons richly worth knowing. Careless growers who do not observe closely, nor think carefully upon what they see, will usually miss the communication which the tree makes in the interest of its own thrift and the grower's profit. It would be quite feasible for one with sufficient knowledge of plant physiology and pathology to make out a dictionary of the sign-language of the plant, so that less observant people might learn to understand at least some of the simpler ideas expressed, and might receive suggestions at least of some of the more complex situations which the behavior of the plant indicates. It is quite possible that the future may develop achievements of this kind, for we are surely learning each year to better understand the wonderful problems and processes which are involved in plant growth, and thus are becoming better fitted to recognize signs of phenomena which are of much moment.

During the last few years in California we have had a chance to learn much about the effect of scant moisture upon plant growth, and we hope such a chance may not come again in a generation. One of the plates on this page shows two-year growths of the apricot tree. In the lower part of the plate there is a small figure showing two twigs each of about three inches length attached to opposite sides of the old wood. Such twigs as these were the only growth which the tree made during a whole season. Encircling the higher space of the plate is the year-growth of another apricot tree, showing an extension of over three feet. These two trees stood not far apart in the rich loam of the Niles region of Alameda county, and the photographs were taken to illustrate some investigations made by the University Experiment Station to determine how far cultivation conserved soil moisture. Dr. Loughridge, who made the investigation, found that the tree which made the three inches of new growth stood on uncultivated ground and the soil contained to a depth of six feet from the surface an average of 4.2% of moisture. The tree which made three feet of new growth stood upon well-cultivated ground, and the soil, to the same depth as in the other case, contained 6.3% of moisture. The tree which made a good growth had then 50% more moisture than the other and was enabled to show good growth in a dry year because its owner treated it properly. This conclusion is too obvious to need comment. But trees get into distress in other ways than by lack of cultivation and scant moisture supply. Sometimes they have been allowed to overbear or for lack of pruning do not renew their wood, but struggle along without vigor, making no strong bearing wood. The grower who ever studies closely can soon understand what the tree is trying to tell him of its distress, and, by thinking carefully, he can usually learn his own duty on the premises.

New Growth on Trees, Cultivated and Uncultivated; Creek Bench Land, Niles, Cal.

1 2 1 2

OLD MIXON CLING. MORRIS WHITE.

Effects of Spring Pruning and Winter Pruning and Thinning

Pruning in Place of Thinning.

How far late spring pruning may take the place of thinning fruit is an interesting question. All pruners should have a thought to the removal of excessive bearing wood so that the tree may not carry more fruit than it can bring to satisfactory marketable sizes and some calculate to do the most of the necessary thinning with the shears. Recently it has occurred to a number of growers that they could prune late in the spring, after the fruit had set, and thus save the cost of thinning. Mr. J. W. Mills, of the University substation at Pomona, Los Angeles county, made some experiments to satisfy himself on that point and the engraving used herewith represents two of his comparisons. Two different trees of each of two varieties were chosen. One of each was spring pruned after the fruit had set and these are marked No. 1 in the plate. One of each was regularly winter pruned and then the fruits thinned by hand in the usual way. These are marked 2 in each case. It is clear from the picture that the 1 is larger than the 2 in each case and the conclusion is therefore that by pruning late one can get larger peaches than by winter pruning and hand thinning afterward and save the cost of hand thinning. This is a timely matter to think of now and the picture conveys only a hint of the practice. It may be a new idea to some that trees can be pruned after the spring growth has started and the fruit set, without injury to the tree. This may be accepted, however, as a fact. We have done and seen enough cutting in that condition of the tree to know that the tree takes kindly to it. With that assurance growers can experiment for themselves with a few trees to see how they find the method to stand economically as compared with the old winter pruning and spring thinning.

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E. J. WICKSON,.....Horticultural Editor.

San Francisco, March 2, 1901.

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The Week.

And now it has warmed up, plenty of hot water has been thrown down, and California is to be spared, after all, that second "Snowfall Bulletin" which was threatened and against which we entered a mild protest last week. But we are getting something quite as bad in the low lands, and broad, valley lakes are likely to prevail again this year as they did four years or more ago. Those monster pumps of the river bank lands may have to be used this year for drainage rather than for irrigation. Meantime everything is growing riotously and a little dry spell to moderate its gait somewhat will be better for its later standing. Fruit blooms are appearing freely and wild flowers showing in the vast expanse of verdure. For the next few weeks the whole State will be a flower-decked lawn fit to capture the many hearts now arriving on personally conducted excursion trains at cut rates. Fortunate people; we do not care if they never go back—that is, the best of them.

Wheat options have been uneasy. They rose and have again receded, but are still higher than at our last report. There has been a free outward movement, in all five cargoes, with about 19,000 tons, worth nearly $400,000. One cargo, nearly 6700 tons, is the largest ever cleared from this port. Spot wheat is unchanged. Shipping barley has also done something. A cargo of 3500 tons has gone to Europe. Prices are fairly steady for shipping barley, but feed is still low and weak. Oats are quiet but not lower; rather more is offering and taking is slow. Corn is unchanged and rye is weak and dragging. Beans are quiet and held as before, but little is doing. Bran is moderately firm, supply rather light, and dairy feeders buying freely. Hay is slow at old figures. Beef and mutton are quiet and unchanged. Hogs are still going at full prices; Eastern are still arriving, though local supplies are shy. Butter is weak and lower; much of it is soft and "watery," as the trade says, and little really fine. Cheese is still drooping, but stocks are light. Eggs are lower and will apparently soon reach the packing point—in fact, packers expect to start in next week. Poultry is firm for all good stock. Turkeys are lower owing to large arrivals. Shippers seem to think that people want turkeys for Washington's birthday and send too many every year. An American wants nothing but picked cherries on that day. Potatoes are unchanged; few fine and many common. Onions are a little easier than they have been, but still higher than a week ago. Supplies are being brought in from Oregon, Nevada and Australia. Fine apples are still high and scarce. There are too many common oranges—twelve carloads to be auctioned on Wednesday—but really fine fruit goes well. Lemons are unchanged: there is a better movement but supplies are ample. A little business is being done in dried fruit at low figures; peaches are going fairly. There are still cheap prunes to be had. Almonds are weak and shading downward. Wool is no better nor is it likely to be while country buyers are chasing themselves around trying to buy the spring clip at the best figures they can. It would not help them at all to have things lively in the city, and so the city wool merchant pulls down the corners of his mouth when the interviewer asks for the state of things.

There is reason to believe that the jam route may take much greater amounts of California fruits than recently supposed. People who know the English have always urged the feasibility of jam by the tank or ton from here, to be retailed there by the pound or pint, to be ladled in all its stickiness into the purchaser's receptacle, so that a maximum amount of jam could be supplied for a small price, and no cost for can or label. The Australian fruit growers have recently been doing something quite large in jam shipments "home," and California bids fair to be up in it, also. A London paper says that a single order from one noted London firm alone amounts to twenty-eight tons of apricot pulp from California. Plums, pineapples, quinces, apricots and peaches are also largely imported to London in the form of jam, and American strawberry pulp is also claimed to be threatened. The British grower has cause for complaint "that the demand is not what it was" for his products. It will be a fine thing for California to work up unlimited amounts of jam of all kinds. Ten million pounds of prune jam would be a fine order right now.

The Southern Pacific has announced that the carload minimum on shipments of dried and canned fruits would be advanced from 24,000 to 30,000 pounds beginning April 1st. People who handle canned and dried fruits say the advance in the carload minimum will seriously cripple them in the distribution of their goods in the East. Many Eastern dealers would take a carload of twelve tons where they would refuse fifteen tons in one consignment. A memorial to the traffic officials of the company is to be prepared in which all are expected to vigorously protest against the threatened action.

We have in this issue another letter on the handling of resistant vines and other communications are arriving to continue the discussion. This subject is now the one most alive in our horticulture. Grape prices are advancing and likely to be high this summer. Growers do not propose to be knocked out by a bug too small to make a speck on the average retina and are making a run on resistant roots which will absolutely wipe out the stock of the most popular varieties. It is not sure that these varieties are best: there are others which may show special local adaptations but the rush is on now and away things go. For example, the Rupestris St. George has done best so far on our soils disposed to get quite dry in summer. It does not follow that this will be best also in vineyards in Fresno or elsewhere where the water has risen by sub-irrigation. There remains, therefore, much to be done by local experimentation. Still, buying of resistant cuttings has been large. It is reported that one grower at San Jose shipped the other day 150,000 cuttings to Fresno. The cuttings were for the most part made up of Rupestris St. George, yet there was also a quantity of the Riparia Gloria de Montpellier, a root well adapted to moist land and which may strike the Fresno conditions well. Since the discovery of the phylloxera in that region planting vinifera cuttings or roots has practically stopped and some tracts recently planted on that basis have been plowed up. It is better to be sure than to be fast.

The stockholders of the prune association have given the directors the right of way on their propositions to push the fruit by advertising, and they now have the power to do that work up to a limit of $200,000, or less, as they see fit. How it should stir the advertising genius to know that all that money is ready to be striven for! We presume the young ladies dealing out cooked prunes in public places will go without much pushing, but what next? If the directors have to listen to all the propositions and plans for advertising, they will not have much time for anything else this spring. But never mind about that; there are still about 70,000,000 pounds of prunes to be sold or made into brandy before the next crop comes, and plans must be pushed hard and fast.

Speaking of that prune arch to be erected in honor of President McKinley at San Jose, has any one reached a proper conception of how beautiful it would be with all the flies on it? It would indeed be a moving spectacle.

Prof. Elwood Mead, whom we mentioned last week as entrusted with the development of instruction in irrigation at the State University, is now at work in Berkeley. He will commence his course of lectures Monday afternoon, March 4th. These lectures will be given during the following six weeks on Monday, Wednesday and Friday of each week at 3:45 P. M., in the lecture room of the Agricultural building. Prof. Mead will trace the origin and describe the growth of irrigation, dwelling on the methods developed for the construction, operation and maintenance of irrigation undertakings, both individual and corporate. He will follow this with the development of the system for diverting and utilization of rivers. The next topic considered will be the legislation on this subject, showing methods of acquiring titles to streams. Then he will discuss some State and national measures required for future development. These lectures will be open to the public so far as the accommodations allow.

Californians will rejoice to hear that all those tropical reciprocity treaties are to be put on a shelf to cool until the next session of Congress—with the additional hope that they will roll off and break their necks before that time. It is telegraphed from Washington this week that the Senate Committee on Foreign Relations decided to make no further effort to secure action upon the various reciprocity treaties. In the present condition of legislative business it would be impossible to secure action upon the treaties during the few days left of the session. Senator Perkins has indicated unalterable opposition to the Jamaican treaty, and other Senators oppose all the treaties on principle. There would be a desire for general debate, and it would be a waste of time to take the question up. That will do for the present, but California producers ought to keep up their agitation while there is still a reciprocity factory at Washington. If our unique and struggling industries, which are now making good progress under a protective tariff, are to be ruined by a reciprocity arrangement which helps nobody except some Eastern monopoly, of what avail is the tariff? It is a delusion and a snare.

The Legislature is dealing generously with the State University. Bills ensuring something like $100,000 a year for the next ten years are making good prospects and seem likely to reach the Governor. The propositions for a dairy school seem likely to be transferred to the regents of the University with the expectation that they will provide this special instruction out of the increased allowance which the institution will receive. Other legislation in the agricultural interest, like the fertilizer control law, does not seem to make due headway, but may show up strongly toward the close of the session, which is now fast approaching.

Eastern fruit growers are taking up the fight against the San Jose scale with much vigor. It is reported that sixty peach growers of Catawba island in Lake Erie have formed an association to spray the trees with crude oil exclusively, it having been demonstrated that this remedy is more effective in the destruction of the pest than anything else. Two carloads of oil have been purchased for the purpose and will be used early in the spring.

THERE will be a fine display of California canned fruits and vegetables at the Pan-American Exposition next summer. The California Fruit Canners' Association has made a liberal appropriation to have its goods brought to the notice of Eastern residents. The Association has accepted a design for a facade to its exhibit. The whole front will be in California redwoods; but, to add novelty to the whole effect, the other three walls will be composed of glass jars filled with California fruits.

QUERIES AND REPLIES.

Tomato Troubles.

To THE EDITOR:—I understand that for three years, from Merced south to Los Angeles, tomatoes have been affected so seriously by blight or, perhaps, some trouble with the roots, that it has been very hard to raise them at all. I think it has been as bad at Fresno as at any other place. Owing to this trouble, tomatoes have been very high here, and there would be money in the crop this year if one could successfully combat this disease. I hope that you have received affected plants and can advise as to experiments for its cure. One of my neighbors intimates that he has a sure cure; if he has, it may be worth something this year. I have not yet persuaded him to tell what it is.—READER, Fresno.

At least three different diseases of the tomato have been prevalent in the interior valley during the last two or three years. One begins with a spot on the leaf, and these spots multiply on the leaves and stems. Another causes an ugly brownish-black spot at the blossom end of the tomato. Both of these can be checked by the free use of the Bordeaux mixture. The third and most serious disease is a blight which causes a whole plant or part of a plant to wilt or collapse suddenly. This is caused by a bacterium which goes from the soil into the internal tissues of the plant and can not be reached by any spray. After one plant is attacked the germs of the disease are carried from it to healthy plants by insects. To escape infection from the soil, keep planting tomatoes on new ground. There is no practicable way now known by which the soil can be freed from the germs. To reduce danger of carriage by insects, insecticides must be used, such as the addition of Paris green to the Bordeaux mixture or powdering the plants with a mixture of Paris green and flour: one part of Paris green to two parts of flour. The spread of the disease can also be checked by immediately burning any plant which wilts down.

By watchfulness and quick use of these means, at least partial crops can be secured, even in localities where the diseases have been prevalent. Any man who has a "sure cure" should be invited to demonstrate it by actual trial. Nothing less than this should antecede the payment for a sure cure, because though there may be many sures there be also few cures.

The Best Early Grinding Corn.

To THE EDITOR:—Will you give the name of the best early corn to grow here for cornmeal, and where I can get the seed?—GROWER, Clayton.

The best corn for a particular locality can usually be best determined by conference with the corn-growers of the vicinity. It is impossible for us to localize all such points, though we try to keep informed on them. If the matter is not locally determined, the two early yellow corns most suitable for trial are the "Yellow Leaming," a large, long ear and strong plant, ripening sometimes in a favorable locality in 100 days. "King of the Earliest" is even a quicker kind, with a large ear, small cob, etc. There are also other varieties which are locally popular. Perhaps some Contra Costa grower will give us his experience. Seed corn can be had from San Francisco seedsmen, and it is usually better to start with the selected seed which they offer than to take local supplies, unless they, too, have been selected by a careful grower.

Subterranean Hog Feed.

To THE EDITOR:—Are there any detailed publications about Jerusalem artichokes? I would like to know about them because I wish to go into the hog trade. I am also going to plant some chufas, which are said to be very good and fattening.—READER, Sonora, Mexico.

We do not know of anything very elaborate on the Jerusalem artichoke. The history of this plant is peculiar. It has been known and urged as hog feed from time to time for the last half century, and yet they are not entitled to any rank as a source of pork. Every little while some one explodes about them, and figures out the millions in them, and yet no one stays with the crop very long. Dozens of favorable reports have been printed in this State and years enough have elapsed to fill the whole State with the tubers, and yet we do not believe enough artichoke pork is produced in this State to supply a single Mohammedan family. Something is the matter with the artichoke, certainly, or it would catch on better. Perhaps the 'chokes peter out for lack of replanting. A few grown as a garden vegetable are always in the market, but the field crop vanishes. Perhaps people find it better to grow hog feed above ground. The chufa is about the same; a chufa craze crops out once in awhile, and between times all is quiet. There is something seriously wrong with plants which do not stick. Perhaps some reader can assign the reasons.

Treatment for Old Trees.

To THE EDITOR:—What wash would you recommend for old apple trees whose trunks are rough and of a dead bark appearance? Would lime water be good? Do you recommend pulling the sprouts that grow during summer off the trees where they are not needed, or is it better to let them stand to winter than green or summer prune?—B., Butte county.

So long as the trees are dormant a safe and effective cleansing wash is one pound of caustic potash to six gallons of water. Lime water is not strong enough to have any appreciable effect. If, however, the bark is injured by sunburn, a good whitewashing may check the increase of the injury, though it can not cure it. Sprouts, which can be made of no service as new branches, should be pulled off as soon as seen all through the growing season.

Celery Blight.

To THE EDITOR:—We shall be greatly obliged to you if you will favor us with such information as you have relative to the celery blight. We lost fully one-half of our crop last season through the blight, although we used every precaution possible. Our irrigating system is perfect and it was not through lack of water. We sprayed it thoroughly the whole season, and up to the middle of September we had no signs of it. It came on between two days, and continued to increase in spite of anything that we could do, and if you can throw any light on the subject we shall be greatly obliged to you.—GROWER, Tecumseh, Mich.

We are not aware of such trouble in this State—so far, at least, growers have made no complaint of it. There are two fungus diseases which work great havoc in the East, and we print this note that our growers may be on the lookout for it. We shall be glad of information if any such thing is noticed, so that all may be forewarned and forearmed.

Valuable Acacias.

To THE EDITOR:—I send you by mail three specimen branches of what I am told are acacia. Will you please name them for me? Which is the best acacia to plant for a fast growing hardy tree for shade and shelter, or would the eucalyptus be better on the east side of oranges?—SUBSCRIBER, Dinuba.

The tree with the broadest leaf is acacia melanoxylon; the pinnate or feathery leaf is acacia mollissima; the third one can only be recognized by the seed pods and not by the leaves. The mollissima is a fine, quick growing tree, shapely and gorgeous when in bloom. It would be better than eucalyptus for a low windbreak, because its branches are near the ground, as well as up aloft. We are well impressed with this tree for a windbreak in regions where it thrives. Acacias were once condemned because they harbored the cottony cushion scale, but the Australian ladybird knocked out that objection. We ought really to be planting more acacias. They are beauties.

What to Do With Barren Trees.

To THE EDITOR:—I have about 1200 prune trees of the French varieties, twelve years old, on my best land—moist bottom, 10 or 12 feet to water. They are in splendid condition, large and healthy—the finest looking trees in the valley—but they do not bear. One year they gave $700 worth of dried prunes, but have never paid expenses any other year. Can I bud or graft them to apricots or peaches, or get a crop out of them in any way?—READER, San Diego county.

Peaches ought to do well on your French prunes, as they are in a place to make good growth, but they would probably soon overgrow the stock. The almond and apricot would also take; but perhaps the same causes which made the prunes barren would do the same for them. On the whole, the prune is not a good stock, except for its own kind, and we would rather put in new peach trees than go to the trouble and vexation of grafting over to that fruit. It seems to jar one sadly to throw away fine trees, but it is often the wisest thing to do. Very many unprofitable prune trees have been cut out at the south recently.

Canning Apple Trees.

To THE EDITOR:—Would you advise planting young apple trees in coal oil cans well perforated? Gophers eat them off dreadfully, as we have woods all around us.—HOME PLANTER, Santa Cruz county.

Your apple trees will grow for a time in perforated oil cans, but the perforations should be large enough to let out the roots, and still not large enough to allow the gophers to go in to the root crown. Good results have been reported by taking wire cloth, 1 inch mesh and 3 feet wide. Split lengthwise, so that you have long strips 1½ feet wide. Cut these into pieces about 4 feet long, so that when the ends are brought together you have wire cylinders about 16 inches in diameter. Make tree holes to fit these, putting the cut ends of the wire at the bottom. Plant the trees in these cylinders. The roots can get out freely and the gophers cannot get on.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 25, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature has been several degrees above normal during the week, and the warm weather has caused snow in the mountains to melt rapidly. The rainfall has been unusually heavy in some sections, and this, with the melted snow from mountain districts, has caused a rapid rise in the rivers and creeks. Although no damage has yet been reported, except in the flooding of a few wheat fields by excessive rainfall, there is considerable danger in the low lands of the valley. All farm work has been retarted, as the soil is too for wet cultivation. Grain is still in good condition. Feed is abundant and stock in good condition. Almonds are in bloom in many places; cherries and apricots are blossoming near Vacaville.

COAST AND BAY SECTIONS.

Warm weather has continued during the week, causing a rapid growth of grain and feed and bringing out blossoms on deciduous fruit trees. Heavy rain has fallen in the central and northern counties and light showers have been frequent in the southern counties. At Santa Rosa the rainfall for the week amounts to 3.87 inches, and there was a severe thunderstorm in that and other places on the 23d. In the northern portion the soil is too wet for working, but plowing and seeding have progressed in the southern counties. Grain is in excellent condition, and prospects for large crops were never better. Green feed is abundant. Almond trees are heavily laden with blossoms at Belmont and other places.

SAN JOAQUIN VALLEY.

Warmer, cloudy weather with generous rains has prevailed during the past week. The rain has thoroughly soaked the ground, and in many places stopped plowing. Water is standing in some low places in the grain fields, but not in sufficient quantities to cause damage. Early sown grain is reported in splendid condition, but the late sown needs more sunshine. Green feed is abundant. Pruning and plowing orchards progressing rapidly. Almonds are in bloom in most localities, and peach and apricot buds are swelling rapidly. Fruit trees and vines are in excellent condition.

SOUTHERN CALIFORNIA.

Warm weather has continued through the week, greatly benefiting grain and grass. Light rain has fallen in some sections, but it has not interfered with farm work, and considerable progress has been made in planting late crops and cultivating orchards and vineyards. Grain is in first-class condition and gives promise of a larger crop than for several years. Green feed is plentiful. Deciduous fruit trees are advancing rapidly, and will soon be in bloom if warm weather continues. Citrus fruits are being gathered and shipped in large quantities.

EUREKA SUMMARY.—Warm weather and heavy rains nearly all the week; valley lands thoroughly saturated. Grain on high lands growing finely. Pasturage is exceptionally good. Pruning of orchards continues.

LOS ANGELES SUMMARY.—Grass and grain are growing rapidly. Farmers are plowing for summer crops. Oranges are moving freely. Almonds are in full bloom in some localities. Mountain snow is melting fast and keeps creeks full.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Feb. 27, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	3.14	38 45	40.10	30.41	46	68
Red Bluff	.75	22.72	16.69	18 50	42	68
Sacramento	.68	16 10	13.87	14.24	48	70
San Francisco	2 00	18.04	15.11	16.71	48	72
Fresno	.28	8.94	6.21	6.21	46	70
Independence	.20	5.68	2.14	4 39	38	66
San Luis Obispo	.59	27.04	12.66	13.75	46	80
Los Angeles	T	13 61	4.57	12 58	50	82
San Diego	.00	8.53	2.65	7.18	54	74
Yuma	.00	3.60	.76	2.54	50	82

HORTICULTURE.

Citrus Fruits—Their History and Literature.

By CHARLES H. SHINN of the University of California—Opening address at the Cloverdale Citrus Fair.

You have built a temple here for that marvelous group of oriental fruits whose very names are deeply rooted in the language and literature of prehistoric races. These citrus fruits you are learning to cultivate illume the pages of poetry as well as the sober records of horticulture. The orange tree in your midst, islanded in sea-like mountains, bears the red-gleaming golden apples of the Grecian Hesperides. Nameless heroes, great as Hercules, have toiled over dreadful deserts, sailed perilous seas, conquered savage races and wild beasts these two thousand years and more, and by reason of their lives you have the orange here in this valley, and are gathered together in its praise.

None of us are aristocrats in this American land of semitropic horticulture, and yet we have, as you observe, our "House of the Prince of Orange." Here, too, in spite of South African wars, may the children always find an "Orange Free State." I doubt not that when you who dwell in this fair realm desire a humorist, you read the writings of Mark Lemon, and that you prefer a lime-light for illumination. Even at one's worst, in such a land as this, a man might well be with Shakespeare's Count Orlando "civil as an orange, and something of that jealous complexion."

HISTORICAL.—The really classic literature of the orange begins, as I have said, with the tale of the garden of the Hesperides, and yet if oranges were grown in those Atlantean islands they were not sweet, but bitter. The bitter orange was undoubtedly the wild original stock, and its home was somewhere in southeastern Asia. From two to three parent types, countless forms have developed.

The first mention of any citrus fruits is found in early Sanscrit writings, where the name "Nargarunga," from which our word orange comes through the Arabic, is applied to the bitter orange and the large, rough-skinned citrons. The specific Latin name "Aurantium" comes from the same source. The citron is called in Sanscrit a "needle-melter;" its juice made swords blue, it was famous in medicine; seventeen epithets found in the Sanscrit all refer to the bitterness and the acidity of the orange and citron.

Even in the time of Alexander, bitter oranges were still unknown in western India. Arabian merchants and travellers found them in eastern India about the seventh century, used them in medicine, and by the ninth century extended their culture into Arabia itself and even to Syria.

Sweet oranges, which originated by some accidental seeding in some part of southern China, became known to oriental cultivators perhaps as early as the thirteenth century, and were much more rapidly transferred to other parts of the world than had been the case with the bitter type. They reached Europe some time in the fourteenth century, by way of Palestine and Syria, and again through the Portuguese navigators in 1498 and after — whence the names Lisbon and Portugal oranges.

Botanists, as De Candolle says, "are unable to discover any other character than taste to distinguish the sweet from the bitter varieties." Horticulture, ancient, mediæval and modern, has developed very many changes since, but still greater steps are possible, and the citrus fruits of the future will be better than any which now exist. In this valley, where two such investigators as Carl Purdy and Luther Burbank are living and working, there should be many experimenters to follow their lead.

Citrus medica, the lemon, or "limon" of old writers, is a far older fruit, as far as its culture goes, than the sweet orange. The Sanscrit writers described the true citron and the lime. Wild forms of these two, also of the sweet lime and of the true lemon, are found in India. Some of these fruits were cultivated in Media, Persia and Mesopotamia, whence Theophrastus, three centuries before Christ, called the lemon the "apple of Media." Gradually spreading over Asia Minor, the citron, or true Citrus medica, reached Italy by the third century. The Hebrews probably cultivated it from the time of the Babylonian captivity. The more acid sub-species, such as the lemon and lime, long attracted less attention than the citron. In the tenth century the Arabs took the lemon to Palestine and Egypt. Italy had them in the thirteenth century.

The small or Mandarin type of orange (Citrus nobilis) is a native of China, where it has been cultivated for many centuries, but it did not reach Europe till the beginning of the nineteenth century.

Alexander Neckham, the earliest Englishman to write about gardens (about the close of the twelfth century, says: "A noble garden will give thee medlars, quinces, warden trees (a kind of pears), peaches, pomegranates, lemons or citron apples, oranges or golden apples, almonds, dates (which are the fruit of palms) and figs." He had spent much of his time in southern France and probably in Spain and Italy, so that this catalogue is far too semi-tropical to suit the average English climate.

Sir Walter Raleigh brought the first orange trees to England, and Sir Francis Carew planted them in the open ground somewhere in Surrey, where they lived till the great frost of 1839–1840. A few trees (probably of the Seville bitter orange) planted in Saltcombe, in Devonshire, lived for over a hundred years. But the most famous orange trees in Europe are those grown at Versailles and the Tuilleries in large boxes or tubs. Some of these came from seeds sown in 1421 and others from seeds of the time of Francis I. Cordova has trees 700 years old. Another venerable tree was planted in a convent yard at Rome in the year 1200 by St. Dominic, and is, I believe, still bearing fruit.

I must pass over a wealth of allusion to citrus fruits in classic and mediæval writings, but I cannot forbear a few quotations from quaint old Gervase Markham's "Countrey Farme" (London, 1616):

"In October the gardener is advised to bestow his Orenge Citron and Pomegranate Trees in some covered place to avoid the danger of eminent cold"; "in Aprill, about St. George his day, you shall set abroad your Citron and Orenge Trees. (This was of course tub culture and use of cellar.)

Our old writer than describes the citrus fruits of his time. He has citron trees, orange trees, "limon" trees and citron trees of Syria and of Assyria—five sorts in all. His "Pome Adam" was a very large, coarse citrus fruit, resembling the shaddock, as nearly as one can judge. "with many clefts like the print of teeth, which," he says," shows it to be the apple which Adam did bite upon." He says, "All these citrus fruits are of great tendernesse and incredible daintinesse," and he explains in detail their growth, propagation, culture and houses, and the method of obtaining trees from Italy, France and Spain. His views seem to modern readers extremely crude, laborious and unprofitable, but it ought to make us—in California—grateful for our infinitely better advantages.

He states that you can graft these fruits upon themseves, as citron upon citron, which, indeed, we all agree to; but he also says that oranges may be grafted upon the pomegranate, the pear, the apple and the mulberry. If grafted upon the holly, he says, the oranges will never freeze nor die from a cold wind. Citrons grafted on the mulberry will be red and sweet, and on the pomegranate will be dwarf trees. All these sayings are much of a sort with his recommendation to graft the olive upon the grapevine, in order to improve its quality. He prefers orange stock for his citrons and citron stock for his lemons.

The gourd and summer squash, he says, is a friend to the citron and should be planted near; indeed, even the ashes of gourds make them more fruitful. These are very old superstitions, hence the name "citron" still applied to some curcurbits.

Oranges, he says, must be gathered in the change of the moon, and in the night, and he gives quaint recipes for preserving them through the winter "in heaps of barley," or covered with "plaister," or in "salt brine." He describes the various distillations of orange and lemon flowers, rind, etc., their medicinal uses and the making of marmalades.

Although most of his recipes are absurd, let us not forget that rare old Gervase Markham's writings formed for nearly a hundred years the great rural cyclopedia of the English people, and that much of interest still lingers in his ponderous volumes.

But the story of citrus fruits in the lands where only the highest horticultural skill can keep them alive in a few favored spots, or can grow them in costly orangeries and citronieres, has too many limitations to be of much interest here. We know that as far north as Copenhagen and St. Petersburg men grow oranges—a marvelous triumph of horticulture, representing nearly a thousand years of slowly accumulated skill. Yet it does not stir in our pulses as does the outdoor work of our own orange growers. For the true literature of the citrus tree one must, therefore, go to the Orient, which is everywhere gorgeous with scent, color and lavishness of citrons, oranges, limes, lemons and their innumerable varieties. These shine in the "Arabian Nights" and in myriads of real and modern gardens.

> "Far off, and where the lemon grove
> In closest coverture upsprung,
> The living airs of middle night
> Died round the bulbul as he sung.
> Not he, but something which possessed
> The darkness of the world—delight,
> Life, anguish, death, immortal love."

Everywhere—in thousands of books of travel, in endless books of poetry, in Kingsley, Keats, Shelley, Tennyson, Aldrich—one finds the full charm of orange groves. Anglo-Indian Phillip Robinson writes: "Pleasant indeed is my Indian garden. * * * The citron, lime and orange trees are beautiful alike when they load the air with the perfume of their waxen flowers, or when they are snowing their sweet petals about them, or when, heavy-fruited, they trail their burthened branches to rest their yellow treasure on the ground." Does not that seem as if it might be in our own California?

But I will call your attention to what was done and said long ago by one of the most remarkable of Asiatic monarchs who flourished in India in the early part of the sixteenth century. He was "a desperate warrior, an elegant poet," a lover of gardens, a "most resolute and royal drinker of wines," and, while his given name was Zehir-ed-din-Muhammed, he was generally called Baber, or "The Tiger." Now this terrible fellow became by force of his arm and brain Emperor of Hindoostan, but he found time to plant gardens and to write and receive letters about various flowers and fruits. He describes one orange as so thin-skinned that it could not be taken to market, while another—the "Asterabad" variety—often went 1100 miles in an ox-cart and arrived in good condition. His "Bajour" orange tree yielded 7000 fruit one season. Of the lime he says that "it will cure a poisoned man," which idea crops up in much of the olden literature of citrus fruits.

This great Emperor, descendant of Zengis Khan and Tamerlane, founder of the splendid Empire of the Moguls, planted in 1508 a "charbagh" or great garden overlooking the Kabul river. In his journal is a striking description of the place whose reservoir "was wholly planted around with orange trees." This place he calls "the very eye of the beauty of the garden," and adds, "At the time when the orange becomes yellow, the prospect is delightful." A vast mountain crowned with perpetual snow, from which nine streams descend, overlooked the garden.

Leaving this literature of the Orient, let us come nearer home. Orange culture in America was attempted in colonial times along with the silkworm, European vines and many other crops that proved impracticable, and their story makes sadly interesting reading now. By 1833 Kenwick, in his "New American Orchardist," describes eight species and varieties of citrus fruits. Downing adds about eight kinds of oranges to Kenwick's list, and, in like manner, we can go through all the horticultural writings of Americans, excepting some of the local material in Florida and Louisiana, and find nothing of value to Californians regarding citrus fruits until we come to our own investigators. We are of course compelled to study with great care the monumental folio of Risso and Poiteau, published in 1818, also Gallesio's valuable monograph of 1811, and in lesser degree Dr. Bonavia's writings. We find much in the horticultural writings of French, Spanish and Italian authors which is suggestive here. But in the main we have had to work out our own problems and put the result in print. Hence California will in time possess the largest and most practical literature in the world upon the culture of citrus fruits under semi-arid, semi-tropical conditions. The prototypes for this we find in Arabia, North Africa, Italy and Spain, not at all in Florida and Louisiana. In this sense, all of the citrus districts of California are one, and must rise or fall together.

Aside from questions of Porto Rico and the Hawaiian Islands, our California growers must face the competition of Jamaica and Mexico. In these days of reciprocity treaties, no country can long maintain prohibitory tariffs; the solution of the problem rests upon the most intensive horticulture ever known to civilized man. California must create and maintain finer citrus orchards than the world has ever seen. This means co-operation; it means fertilizers; it means small, wept-kept groves; and, in especial, it means the development of every possible economic product of the leaves, the flowers, the fruits, the woods, of the various members of the citrus family. Then even if some pan-American railway strings Mexico, Nicaragua, Bolivia, Paraguay and all the orange-producing countries south of us on one trunk line, we shall still hold our own.

And at this point I must close, leaving much unsaid, but with the hope that your orange plantations will extend and prosper greatly; that every garden in this fair valley will be as rich in citrus fruits as was that garden of Baber, the Mogul; and that important contributions to the growing literature of the subject will come from your sons and daughters in years to come.

Peaches vs. Oranges.

Why our literary societies in rural districts do not take live local subjects more fully than they do we do not know. Certainly if they desire to awaken interest they would do well to try this line of discussion. The Oroville Register, whose editor, Mr. Boynton, is a very careful horticultural writer, has prepared an account of a discussion in Wyandotte, Butte county, which will interest fruit growers in all parts of the State. The subject was, "Resolved, That there is more profit in growing peaches than in growing oranges"—and peaches won.

LOCAL POPULARITY OF THE PEACH.—It will be surprising to many that any peach grower can be found who will even claim to have made more money than his neighbor who grows oranges, but Wyandotte has plenty of people who believe the peach the more profitable fruit, and are showing their faith by their works, for they are planting peaches. In the debate Saturday evening the peach champions admitted every fact claimed by the orange men—admitted that a Wyandotte orange orchard yielded $30 per acre at three years, $50 at four years, and this year $100 per acre, at five years from planting. They

admitted that oranges in large tracts pay $400 per acre, and yet they submitted figures on peaches, figures on local peach orchards, and won their point.

As peach growers in some sections find that their profits are seriously cut by frost and the various troubles which afflict the peach, we desire to call particular attention to the results of this debate at Wyandotte, in the almost frostless foothill region of Butte county, where the peach tree attains only a moderate size but bears its crop every year. Peach growers are making money here. They are adding to their orchards every year and do not hesitate to compare their figures with those of orange growers, generally supposed to have the very best investments obtainable.

THE DEBATE.—The debate was opened by Scott Whipple, who attacked the orange industry vigorously, declaring (for purposes of the debate) that it is all a boom, and worked up by speculators in order to make profitable the existing ditch systems and to sell sheep land at high figures. He declared successful orange culture is necessarily limited to specially favored spots, while peaches may grow almost anywhere in mountain and valley. He cited the fact that although the first orange tree was planted in this county in 1856 or '57, no trees were planted for commercial purposes until thirty years later, while peaches have been a staple crop for years. His opening speech was along this line, and when he finished the applause showed that peaches had scored one.

John Grubbs opened the argument for the oranges. He did not wax as eloquent as Whipple, but confined himself to cold figures. He thought Mr. Whipples' effort a good speech, but the real fact at issue had not been touched, and proceeded to tell how much money is being made in oranges. Four hundred dollars per acre was the figure named and several orchards cited as instances, among them the Hearst orchard of 240 acres, the Treat orchard and others, both at Palermo and Wyandotte. He quoted the returns from the young orchard of H. W. Miller at Wyandotte, $30 per acre at three years, $50 per acre at four years, $100 per acre at five years of age, and declared that when the peach men could show such figures he would give up the case.

The next speaker, in reply to the orange champion, declared it was not a question of how much per acre, but how much return on the investment. He declared four acres of peaches could be planted and brought to bearing with the money required to plant and mature one acre of oranges, and that $100 per acre on peaches—a common profit—is equivalent to $400 on oranges. He cited instances of local growers who had made that much and more, among them Lon Rose, who testified to realizing $100 per acre from Muir peaches, and John Watkins $125 per acre. Wm. Bills closed the negative side and he, too, went in for figures. He had planted both orange and peach trees and found the difference in cost to be only slight. He called attention to the fact that an orange tree lives 100 years, while a peach only lives fifteen years, and said the peach men, to be fair, must count four plantings within the lifetime of the grower against only one planting of oranges—three waits for trees to grow against only one wait for oranges. He called attention to the marvelous growth of the orange business in Butte county within the past ten years, as showing that if Butte county was slow to realize that oranges would pay they had at last found it out. He made a strong case for the orange, but was destined to defeat. Mr. Whipple followed with the closing argument, and if he slighted figures at first he gave them full play now. He admitted all the orange men had claimed, and still his figures showed that at the end of a period of years the peach grower would be able to buy the orange man out and have money to burn besides, and the judges gave the verdict to the peaches.

THE VINEYARD.

Bench Grafting Resistant Vines.

TO THE EDITOR:—The numerous criticisms of Prof. Husmann in regard to the evils of "bench grafting" seem to be leading to so many misconceptions on the part of many of the smaller grape growers who are not fully posted in regard to viticultural methods, as evidenced by letters that come to me, that I am tempted to answer, not that I desire any controversy, not that I have any particular cuttings for sale (for they are all sold), but simply to make a fair statement of the case and correct some of the good professor's misconceptions.

His ideas about bench grafting seem to be drawn from what he has heard said about the subject, not from his actual experience. He refers to the experience of George Schoenwald of St. Helena, who grafted 25,000 cuttings with a success of only about 10% as typical of what vineyardists may expect if they attempt bench grafting. Mr. Schoenwald was the pioneer bench grafter of St. Helena. He struck out on new lines and, like all pioneers, made some mistakes. But his work has been of the greatest value to his neighbors and to the viticulturists of the State. His heavy loss that year came from the fact that cotton twine was used for tying the grafts instead of raphia. Mr. Schoenwald has not, as Prof. Husmann intimates, abandoned bench grafting, but is still using the method and making preparations to do so again this season. B. Bruck of St. Helena is satisfield with the results of bench grafting, and has now made preparations to bench graft for the third season. He has had uniform success. At our vineyard we are beginning to bench graft for the third season. We have had uniform success in the past. Instead of the 60% that Prof. Husmann has talked about in numerous newspaper articles as the utmost limits of possible success, our nursery yielded by actual count 77% of perfect unions with strong roots. I once told the professor, in answer to his inquiry, "What per cent can you depend upon?" that 60% was a conservative estimate.

HOW GRAFTS ARE HANDLED.—Prof. Husmann speaks of "coddling the grafts in the callus bed," saying that most viticulturists haven't the capital necessary to erect callusing sheds, etc. How much actual truth is there in these statements? I will tell the reader how much we "coddle" our grafts, and he can judge for himself as to whether Prof. Husmann is posted with sufficient accuracy to give his opinion weight. We graft in March and the early part of April. We graft on rainy days when Nature is kind enough to send such, and in all kinds of weather. The "expensive callus sheds" in which we "coddle" our grafted cuttings are made as follows: Five or six loads of sand are hauled and dumped on the ground. Four boards—about 1x12, or wider—are laid on edge, like the sides of a mortar bed. As fast as our cuttings are grafted they are placed in a leaning position in the bed and covered with sand. It costs about 10 cents a thousand to bury them up. Is this a prohibitory expense? But I forgot—the professor calls it a "shed." And so it is, for we take an old canvas or wagon cover and hang it, tent fashion, so as to shed off the rain. This expense does not seriously encroach on our "capital." Then comes the "coddling." Every sunshiny day we let the sun shine on it. Sunshine is cheap in Contra Costa county. About the middle of April our nursery ground is usually ready. We take the grafted cuttings, which by this time have callused, and plant them in the nursery trenches. If the soil is clayey, we throw a little sand around the junction and over the top. If the soil is sandy, we don't. Then we let them grow till about July 4, when the raphia which has not of itself rotted off is cut off, and the top roots from the scion removed. This part of the process is a little tedious, but not one-tenth part as tedious as cutting roots on vines that have been planted in the vineyard and grafted there. It is all well enough to say, "Graft at or above the surface of the soil," but it is often impossible. Many vines grow like gooseberry bushes. What are you going to do then? Cutting out the buds of the cuttings as a preliminary helps some, but does not entirely eliminate the trouble. I think from the foregoing that the reader will see what weight Prof. Husmann's objections to bench grafting really have.

THE INTERMEDIATE METHOD. — The intermediate method, which he advocates in his last articles, has some merits, in view of the fact that there is only a limited supply of cuttings in the State large enough to bench graft. It also has a merit in that it gives a beginner time to start a nursery and get something growing on which to practice. It is all right for this year, when small cuttings are obtainable and large cuttings are scarce. But as compared with bench grafting it has several points in which it is not so good:

1. Instead of one year, it is two years before the grafted vines are ready to plant in the field—quite an objection if one is waiting to get vines into bearing.

2. It is much more difficult to make a perfect fit bending over the little vines than when working at a bench, consequently poorer unions.

3. The vineyardist cannot utilize rainy days and weeks when the ground is too wet for plowing or cultivating.

4. And here bomes a theoretical objection. In my foregoing statements I have stuck close to what I have learned by actual experience in doing these things with my own hands and watching the results of the work of our own workmen. But this one is based on Prof. Husmann's own statements. In most of his articles condemnatory of the pernicious practice of bench grafting he refers to the "stunting" of the vine on removal of a rooted vine to the field. Now, our experience has not shown this to cut any figure with yearling vines removed to fairly decent soil. Rooted vines grow where cuttings perish. But with the very few two-year-old vines that we have planted there has been evidence of "stunting." I suppose that the older a plant is the more difficult it is to transplant, and I believe that two-year-old vines suffer more in transplanting than one-year-old vines. This is according to Prof. Husmann's own theory. But I do not state it as a fact. I shall experiment, and hope to find out before long. At the same time I would buy one-year-old rooted vines in preference to two-year-old rooted vines at the same price.

A PRACTICAL AFFAIR.—To conclude, I will emphasize the fact that bench grafting is not the invention of a theorist. Any vineyardist with the ability to do things carefully, with a few square rods of soil that are not fit for rooting in, with a few loads of sand, and with intelligence enough to read and follow simple directions, can make a success of bench grafting. I omitted one thing—he needs a piece of canvas 12 or 14 feet square. I think it is the easiest way and the simplest. But it is like paying cash instead of buying on the installment plan. The care all comes in the first few months, and is then over, instead of, as in nursery grafting, being spread over two years, or in field grafting, last year so earnestly recommended by Prof. Husmann, being spread over year after year for four or five or six years.

ORIGINAL EFFORT.—In conclusion, I want to say to the intending vine planter: Don't take my advice, or the advice of any one man. Study each method before coming to a conclusion. Spend a few dollars in traveling, and see what results have actually been accomplished by the advocates of different methods. If a man says, "Do thus and so," go and look at his vineyard and see if his ideas have produced satisfactory results. Twenty dollars spent in investigation is better than $1000 spent in blindly following "advice."

One parting word: If you visit the vineyard of a man who advocates grafting in the field, take something along to scrape away the surface soil and see whether he has a fringe of non-resistant roots, unknown to himself, slowly but surely turning his vineyard into food for phylloxera.

Martinez. FRANK T. SWETT.

Mr. Swett's letter was in our hands before the appearance of Mr. Gillet's letter, printed in last week's PACIFIC RURAL PRESS. It is in no sense, therefore, suggested by nor a commentary upon Mr. Gillet's letter. Perhaps that may come later. We wish this thing to go on until all who have facts are heard, so that our readers may have the benefit of all the light possible on a very important and somewhat obscure point.

THE DAIRY.

Practical Hints on Dairying.

Compiled by MISS LIZZIE MCCORMICK, for the Farmers' Institute at Winters.

Every one who keeps cows for the purpose of making butter is desirous of making an article that will bring the best price possible, and of making the greatest amount of butter possible out of the milk produced. When the milk is delivered to a creamery the butter is usually manufactured by those well instructed in the art of butter making, and the result is a fairly good article. Besides this, the creamery is equipped with appliances which enable its butter maker to obtain nearly all the butter contained in the milk, and, by his knowledge of what the general butter market demands, he is able to produce an article that is readily sold.

The case is different with those who make butter on the farm, where by far the greater amount of butter is made. While in some cases a choice article is made, in many instances the great bulk of farm-made butter fails to bring the price it should, entailing a loss on the farmers of the country which in the aggregate is enormous.

GOOD MILK.—To make good butter one must have good milk, and this comes only from healthy cows fed on good sweet grain and other forage, with pure water to drink and pure air to breathe. Certain weeds give the milk and butter a decidedly bad flavor, as does also damaged rotten silage, mouldy fodder or hay, and musty grain. Impure water has its effect, both on the health of the animals and on the quality of the milk.

MILKING.—Milking is an operation that requires skill, as it has an important effect on the amount and quality of the milk given. Good cows are almost ruined by poor milkers. The utmost cleanliness should be observed. Just before milking the hands should be washed. The finger nails should be clean and kept short and smooth all the time. Care must be taken not to let the hands touch the milk. The hands should be kept dry, and sores must be carefully covered. Dirt and milk rubbed into an abrasion on hands or teats cause ugly sores. Any use of tobacco while milking should never be tolerated, and clothing impregnated with the odor of tobacco should be discarded. Impurities get into the milk principally from the cows, the milkers, and the air, none of these being the fault of the cow. The cleaning of the cow is too often considered of small importance. Every milk cow should be carefully brushed daily and the udder and lower parts brushed just before milking. This removes dirt and bacteria that are apt to be shaken off during milking. Outer garments that are used for dairy work only should be cleaned often. White goods are best as they show when they are dirty and are easily cleansed. A hat should be worn to prevent hairs falling into the pail from the milker's head.

STRAINING.—If milk could be drawn in such a manner that no dirt or dust fell into it, straining would

be needless. But this is impracticable, and it is necessary to remove foreign matter by some mechanical means. It should pass through a metal strainer having a fine mesh, and a flannel cloth or cheese cloth folded enough to prevent running through too fast. Both the cloth and metal strainer should be frequently rinsed to avoid gumming and to wash away fine particles of dirt. When passing through the strainer, large surfaces of the milk are exposed, hence the work should be done in a pure atmosphere.

Milk pails should always be made of tin, and the seams soldered smooth so there will be no places for the dirt to lodge where it will be difficult to remove. Tin articles should be washed first in cool then in hot water and after that thoroughly scalded with boilding water or steam. They should then be dried in fresh air, if possible, in the sun.

Creaming the Milk.—When good, clean milk has been secured the next operation is to separate the cream from the body of the milk.

The old way practiced by our mothers and grandmothers was to set the milk in shallow pans with milk 2 or 3 inches deep; and it is true that by this old method as good a quality of butter was made and can yet be made as is produced by any other method, but it has its drawbacks. Uniformly good results can not be obtained because the milk, being spread out in a thin sheet, is exposed to the air so that it is readily affected by atmospheric changes. Bad effects follow an electric storm, the shallow pans make more work than any other method, the creaming is not so thorough as with the separator, and therefore the quantity of butter is less.

Milk should be set as soon as possible after being drawn from the cow, whether shallow or deep setting is used. With open setting it must be in a room where the air is pure. A pantry with a door opening into the kitchen is a bad place. The odor from cooking vegetables and meat will surely injure the butter. Many make butter in a cellar because it is cool but it is apt to impart a musty, moldy smell to the butter. A cellar may be good and cool and yet be so ventilated as to have pure air. Then it is all right for butter making.

To get the best results with shallow setting, the temperature of the milk should not go much above 60° Fahrenheit. The time to skim is when the milk has soured just enough to be a little thick at the bottom of the pan and to thicken the cream. The cream can not be skimmed off when it is thin and sweet without loss. No milk should be taken with the cream, for cream with milk in it sours more rapidly than cream with no milk in it. It can be held two or three days before churning and whenever a new skimming is put into the cream jar, the whole should be thoroughly stirred and mixed.

In the winter effective creaming may be had when the room is very cool, even down near the freezing point. This is accomplished by heating the milk to above 100° Fahrenheit before setting. The cream will rise very rapidly while the temperature is falling. If large pans are used the heating is done by running hot water beneath the milk. Repeated heating and cooling makes very effective creaming, leaving but little butter fat in the skim milk.

The Separator.—By the use of the cream separator a much more perfect separation of the cream from the milk may be had than by any system of setting milk. This is shown by the increased amount of butter made when the separator is used, and also by the milk after skimming as shown in the Babcock test. If the separating is done on the farm immediately after milking, the skim milk from the separator seldom tests more than one-tenth of 1% and frequently less than that.

It is impossible to escape the conclusion that the average loss where milk is set in pans, cans, or crocks is three-fourths of a pound of butter more to each 100 pounds of milk than when the separator is used. This entails a loss, on average cows, of from $6 to $10 a year. Some men try to console themselves by saying. "It is not all lost, the calves and pigs get the butter." But butter is dear feed for stock even when lowest.

Ripening the Cream.—When shallow setting has been used the cream is already ripened or partially so when taken off. It has been kept cool, stirred up when each skimming was added, and is ready to churn at any time when brought to the proper temperature. A correct dairy thermometer is indispensable in butter making. Temperature plays an important part all the way through. It is necessary to know the temperature of the dairy room, the water, the milk, the cream when ripening, and above all, the temperature of the cream at time of churning. No person can guess at temperature correctly every time; therefore no person can make a uniform quality of butter without using a thermometer at almost every stage of the work.

The Churn.—The best churns are those with no inside fixtures and which revolve like the barrel churn, square box churn, rectangular churn, etc. These "bring" the butter by the concussion of the cream in falling from one side of the churn to other as it is revolved. The churn should never be filled more than half full of cream, one-third full is better because the cream has a better chance to fall.

Coloring.—The general market demands that butter should have a color the year round, about like that of grass butter in June. The coloring matter should be put in the cream after it is all ready for the churn. One will soon learn by experience how much to use. It is better to have too little than too much.

Churning.—The cream should be brought to the right temperature for churning before being put into the churn, by having it surrounded by cold or hot water as the case may be. The churning should be done at as low a temperature as possible and have the butter "come" in a reasonable time, say from thirty to sixty minutes. The colder it is churned the less butter fat will be left in the buttermilk and the more perfect will be the granules of butter. Ordinarily from 58° to 62° F. is the right temperature.

The churn should be revolved at a speed that will produce the best concussion. When the butter granules begin to appear a handful of salt or a couple of quarts of strong brine should be added to the cream. This assists in the separation of the buttermilk and renders the drawing off process easier.

Never churn so long that the granules are massed, but cease the motion as soon as they will rise to the surface of the buttermilk. Draw off and add a little more than the quantity of cold water. If the water is about the temperature of the buttermilk at first, best results will be obtained. Too sudden chilling of the granules is not advisable as this sometimes results in a mottled condition of the butter. Agitate the butter slightly, then draw off the water and replace with more. Do not allow the water to remain on the butter long or it will detract from its flavor.

Drain the butter while still in distinct granules and add salt to taste while still in the churn. Revolve slowly half a dozen times and draw off the brine.

Mottled or streaked butter has been explained as being caused by an unequal distribution of the salt, but "white specks" result from the cream drying on top, so there are small portions so hard they do not churn into butter. These particles do not take color like the rest of the butter and the "specks" are thus caused. This is remedied by straining the cream when it is put into the churn. White specks are also caused by milk settling to the bottom of the cream jar and getting over-ripe, thus forming a curd which will not break in churning.

Salting.—Good, fine dairy salt should be used and the finished butter should contain about three-fifths of an ounce of salt to the pound. To insure uniform salting it is better to take the butter from the churn, drain and press out part of the water, then weigh and salt one ounce to the pound. Some salt or brine will work off and leave the butter about right.

Working.—It is best to work butter twice. One thing must be borne in mind by the person who is making butter to sell. The butter is for somebody else to eat, and it is for your interest to make it to suit their taste. You want to make it to suit your customers, and you want your customers to be those who are able and willing to pay a good price for what suits them. So if the customer wants sweet cream butter, make it; if high salted, salt it high; if unsalted, make it so, and so on. They are forming tastes which you can make it profitable to gratify. It is not the province of the butter maker to educate the tastes of the people who buy butter, but rather to cater to their tastes.

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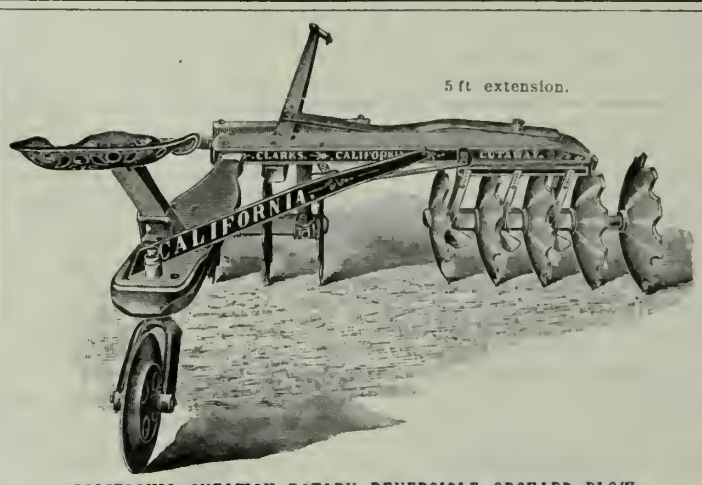

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Agricultural Review.

EL DORADO.

ORGANIZING THE ORCHARDISTS.—El Dorado Republican, Feb. 21: There was quite a large assemblage of fruit growers at Confidence Parlor Saturday afternoon to hear what the representatives of the California Green Fruit Association had to say. These gentlemen are Messrs. E. I. Galvin, T. W. Madley and George H. Cutl ter of Sacramento county, who are members of the executive board of the new association. They are out trying to secure recruits for the association, which is only in its incipient stages. After the three visitors had addressed the meeting on the objects and benefits of the association a membership roll was opened and twelve or fifteen names—among them Judge Bennett, who is interested in the undertaking —were subscribed.

HUMBOLDT.

MORE TIMBER LAND SALES.—Mendocino Beacon: The activity in redwood timber land sales in Humboldt county continues, and almost every day there is some transaction recorded. G. R. Georgeson, the real estate dealer, has consummated the purchase of a tract of about 3800 acres in township 1 north, range 3 east, composed principally of tracts owned by Dr. Gross and Mrs. Tufts of Eureka. The price paid is said to have been over $20 an acre, and it is also said that the purchase was made for an Eastern party. The first large transaction in timber land in the southern part of Humboldt county was also closed about the same time. This was the purchase by L. Feigenbaum of Rohnerville of the Campton, Dunnigan and Nixon tracts, on Eel river, about opposite Camp 2, at Scotia. These tracts comprise between 4000 and 5000 acres of fine redwood timber, and while the price is not given out, it is said on good authority to have been between $60,000 and $75,000.

KINGS.

NOTICE TO FRUIT GROWERS.—Pear blight is in many of the orchards of Kings county in an unusual form. Prof. Pierce, Government expert, is investigating the subject, and the fruit growers would do well to wait before applying a remedy for the disease until he renders a decision in the matter.—N. W. MOTHERAL, Horticultural Commissioner.

LOS ANGELES.

ANNUAL STOCKHOLDERS' MEETING.—Pomona Progress, Feb. 21: The annual meeting of the stockholders of the East Side Fruit Association was held Tuesday at the office of the president, Dr. B. S. Nichols. The affairs of the corporation were found to be in a satisfactory condition and the old board—consisting of B. S. Nichols, J. G. Boake, Paul E. Ussher, G. W. Kuesthardt and W. M. Munro—turned over to the new board, just elected —consisting of G. W. Kuesthardt, J. G. Boake, J. H. Lewis, R. A. Pollock and W. T. Hammon—the books and papers of the corporation. The officers state that the fruit turned out by the association last year was very fine and brought ½ cent per pound more than any output in the valley.

RIVERSIDE.

CHAMPION ORANGE PACKER.—Riverside Enterprise: A fruit packer named Welsh, who is in the employ of the Fay Fruit Co. in this city, lays claim to being the champion orange manipulator in the State. Welsh certainly has a right to make such a claim if the story of his work, as told by those who ought to know, is correct. It is stated that Welsh packed 180 boxes of oranges in one day this week in twelve and one-half hours, which is a record never before touched even by the very best packers who have worked here.

A PRODUCTIVE ORANGE TREE.—Riverside Press, Feb. 22: There was picked yesterday from a single seedling orange tree grown on Mrs. F. T. Pember's place, on Orange street, thirty-six boxes of sound, solid fruit. This, as far as we know, is the most fruit ever taken from one tree in this valley. Several years ago Mr. Hewitson picked thirty-five boxes of seedlings from one tree on his home place, and this record has stood until yesterday.

A GREAT VINEYARD.—Riverside Press: About 9 miles to the northward of Corona, and on the road from Ontario to Riverside, is a plantation containing over 1,000,000 grape cuttings. It is a part of the plant of the West Riverside Wine Company, and the cuttings, when firmly rooted and planted, will complete the establishment of a vineyard of 1300 acres. The area already in vines on the company's lands is 640 acres, which makes a plantation 1 mile square. When this area is doubled this will be the largest vineyard in southern California. The varieties planted are Mission, for sweet wines; the Beger, Zinfandel and Feher Szagos, for dry wines, and about thirty acres of raisins. Messrs. Charles Stern & Sons, Stalter, Harris, K. Cohn, M. J. Newmark and one or two others form this wine company, with Prof. Woodbridge as soil chemist. When the vines begin to bear a large winery will be in readiness on the premises to receive the fruit.

SAN DIEGO.

BEEKEEPERS ORGANIZE. — Escondido Advocate, Feb. 22: A permanent organization of the beekeepers of central San Diego county was effected at their meeting last Saturday afternoon by the election of R. B. Borden, president; M. D. Nichols, secretary; G. F. Merriam, treasurer; and J. M. Hambaugh, assistant secretary. About twenty of the beekeepers of this section have already joined the association and the others will unite with the organization during the season. A committee on by-laws and constitution was appointed with instruction to report at the next meeting, which will be held on Saturday, March 9th, at 2 o'clock. At this meeting complete estimates will be made of the amount of material needed for the coming honey crop. The lowest estimates of the amount of honey that will be produced this season was placed at 6000 cases, while some of the most experienced apiarists assert that with close attention the bees in this section will make 10,000 cases.

SAN JOAQUIN.

REMARKABLE TWIN CALVES.—Lodi Sentinel: On the Fowler ranch, a few miles west of this place, is a cow with a pair of calves that have a remarkable history. The cow is a red and white Durham. The calves came into the world just seven days apart, but both are living and vigorous. Calf No. 2 is considerably smaller than its almost twin brother, but it can make just as much noise and drink just as much milk. Twin calves are not infrequently heard of, but coming in this manner the case is particularly interesting.

THE OLIVE INDUSTRY.—Herald: There is an olive factory near Lodi. The building in which the olives are pickled is about 60 feet long by 40 feet wide, having forty vats, each capable of holding 100 gallons of olives. Water pipes from the engine room and water tank run to each vat and a constant stream of water is running on the olives. After undergoing a lye process, a solution of brine then follows, and, after cooling, is poured upon the olives. They are then sorted and are ready for market. Adjoining the pickling plant is the oil plant, which is running night and day. Mr. Van Gelder estimates that there will be close to 2000 gallons of fine oil, and the pickled olives are unsurpassed. There is a steady increasing demand for the Acampo olives at good prices. J. H. Clancy has shipped already this season twenty tons to E. Cooper, the well-known California olive manufacturer of Santa Barbara. The cost of transferring them is $15 a ton for a distance of about 500 miles.

SAN MATEO.

A FRIEND OF THE REDWOODS.—Redwood City Democrat: Henry Cowell, the millionaire lime kiln proprietor and land owner of Santa Cruz, who owns land near Pescadero, is opposed to the wanton destruction of forests. Recently on his place a tree was felled that yielded 125 cords of wood. He intends to present his redwood tract to the State. The land is densely covered with redwoods, hundreds of the trees being 10 feet in diameter and not separated by more than 10 feet of space. It is bottom land, with a stream running through it. Much game abounds, as the forest is so thick that it seldom has been explored. The only restriction he places on the gift is that the forest shall be permitted to stand untouched in perpetuity.

SANTA CLARA.

SAN FELIPE PRODUCTS.—Gilroy Gazette: There are five cheese factories at San Felipe and the output is nearly 10,000 pounds per week. The persons engaged in that line of business are Clark Putnam, Fred Vile, Albert Orr, George Jarvis and Oliver Orr. These cheese makers ship to Francisco nearly $5000 worth of cheese per month. The milkmen received during January $1.18 per 100 pounds for their milk.

A STALLION SOLD.—Gilroy Gazette, Feb. 22: Merrit Love sold his Norman stallion Sampson last week to a buyer named Hall of San Jose. The horse was shipped to his new owner on Monday. The purchase price was $500 and within twenty-four hours after the bargain was concluded Mr. Love had an opportunity to dispose of the animal for $100 more than the price at which the sale was made.

APRICOTS LEADING IN THE NURSERY SALES.—San Jose Herald: The affections of the Santa Clara county fruit grower are centered on apricots this season. Not in many years has there been such a demand for this species of nursery stock. Nurserymen say they are hardly able to fill all the orders. In all parts of the county 'cots have the lead, and the acreage will be materially increased during the present planting season. A large additional acreage of peaches will be planted this spring. Peaches are a close second to 'cots in the nursery field. The price of the dried fruit in the Eastern market is high, and growers who have orchards in bearing feel much encouraged. Many new orchards of pears and apricots are being set out. The last-named fruit seems to be growing in favor, and orchardists along the foothills of the Santa Cruz range are greatly increasing their acreage.

SHASTA.

ACTIVE CATTLE MEN.—Free Press: The Shasta County Live Stock Association, though it has held few meetings during the winter, has remained in active order and its members have been informally considering the adoption of rules and agreements among themselves by which they hope to bring the industry in this county to the highest point of satisfaction. The association of cattle men organized for mutual protection against the inroads of cattle thieves has discovered a much broader field of usefulness than that of simply bringing offenders to justice. The cattle men expect in the course of time to have a sort of board of trade among themselves. The first meeting of the year of this association, which has absorbed all the minor associations, was held at Millville, Saturday, Feb. 2, and officers were elected as follows: President, Henry Heryford; vice-president, Joseph Dunham; treasurer, Milton Heryford; secretarp, J. R. Hunt; executive committee, J. M. Heryford and Louis C. Smith. Another meeting of the association was held Saturday, Feb. 16, at the same place, with most of the members present.

GREAT FATALITY AMONG PIGS.—Anderson News: There is a disease among the small pigs in this section that is killing almost all of them. The swine become blind and crazy and in a short time die. Elmore and Watts lost sixty head in twenty-four hours recently. There is no known cure for the epidemic.

SONOMA.

CLOVERDALE CITRUS FAIR A SUCCESS. — Cloverdale Reveille, Feb. 23: Cloverdale has crowned herself with glory and can well feel proud of the success that has attended the ninth annual citrus fair. From the very start interest was shown and a determination was manifest, if possible, to make this year's fair better than its predecessors. This has been achieved, the exhibit speaks for itself and the encouraging words heard on all sides show that Cloverdale is yearly making her fairs of more importance and greater interest therefore follows. The pavilion presents a picture of rare beauty, the decorations are elaborate and in perfect keeping with the golden exhibits. The fair colors, yellow, green and white, are everywhere displayed in attractive effects. Carnival flags and streamers flutter from the ceiling and vie with the varied colored butterflies that shoot out from all parts overhead. With evergreens, potted plants, palms, etc., the whole presents a scene of fairyland resemblance.

BIG PRICE FOR COYOTE.—Santa Rosa Press-Democrat, Feb. 24: J. F. Cowan of Kenwood returned Saturday from the ranch of D. R. Seawell, near Skaggs' Springs. Mr. Cowan went up to the ranch with his famous imported English fox hounds to hunt for coyotes that were despoiling the sheep folds. As a result of the hunt Mr. Cowan killed one coyote, a panther, three wild cats and a fox. The coyote scalp he brought to the County Clerk's office and will receive the bounty of $5 for it. In addition to the county bounty, Mr. Cowan received $47 for the dead coyote. This purse was made up by the sheep men of the Gualala river district. The sheep raisers contributing were Joe Erven, J. A. Lancaster, Seawell Brothers, Mr. Poff, Richard Hayden and others. The coyotes have killed hundreds of lambs this season and this accounts for the high price offered for a coyote scalp.

SUTTER.

MONEY IN TRUCK FARMING.—Sutter Independent: In conversation with a Sacramento river farmer the other day, we were given some inside information regarding the profits realized from what is known as "truck farming," or the growing of small vegetables, beans, potatoes, melons and broomcorn. The information confirms the oft-repeated assertions that the small farmer, or the one who has a few acres well cultivated, and who raises a little of everything, is the happiest, most contented and most prosperous found, and a community made up of this class of people is financially sound. The records show a very small percentage of these farmers with mortgages on their property, and a majority of them have a neat bank account for a rainy day.

TULARE.

CHANGE OF RANCH MANAGEMENT.—Tulare Times: The resignation of Major Berry as superintendent of the Visalia Fruit & Land Co. has caused quite a shake-up in the management of the fruit ranches in this vicinity. Geo. Osborne, who has been the efficient superintendent of the Encina for about two years, will take Major Berry's place. J. W. Davidson, who has been on the Evansdale for nearly two years, succeeds Mr. Osborne as superintendent of the Encina. S. A. Hogan, who for several years has had charge of the Levis ranch east of Visalia, succeeds Mr. Davidson as superintendent of the Evansdale. These gentlemen are all experienced orchardists.

VENTURA.

LARGEST BEET RANCH IN THE WORLD.—Oxnard Courier: Probably the largest beet farm in the United States is the Patterson ranch, owned by the American Beet Sugar Co., and as an index to the general sugar beet growing in this county is the best example obtainable. It represents almost every type of soil, has its low spots where water gathers in ponds after heavy rains—although the magnificent drainage system now being constructed will prevent this in the future—has strips of alkali, etc., but on the whole is an ideal beet ranch, having hundreds of acres of level, rich soil. The planting of beets this year has been done entirely with one planter, between 210 and 215 acres having been already drilled. As soon as the ground is sufficiently dry, however, from four to five planters will be put on and run steadily until the planting is finished. About 1500 acres in all will be put in, which is about the same as last year.

OREGON.

WILD HORSES. — Efforts are being made to capture a band of nearly 1000 wild horses which have roamed the hills and ranges of southern Oregon for years, and which are as fleet as deer and equally as wild. This great herd of horses is now snowed in at Scian marsh, not far from Yainax Indian agency. The animals were caught in a heavy storm and are surrounded by 5 feet of snow, in which they flounder about. As browsing is poor, they will starve unless gotten out before spring. This band of wild horses has been increasing for nearly a score of years. It originated with horses which had strayed from ranges. During recent years, when food has been scarce and prices low, many horses of good breed have been turned loose by their owners and have joined the band. It is reported that strains of good blood have been grafted in and some of the wild horses are splendid animals. These horses have roamed at will, sometimes annoying sheep and cattle raisers by roaming their ranges and cropping the grass close.

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Men who shall join its chorus and prolong
The psalm of labor, and the psalm of love.
The times want scholars—scholars who shall shape
The doubtful destinies of dubious years,
And land the ark that bears our country's good
Safe on some peaceful Ararat at last.
The age wants heroes—heroes who shall dare
To struggle in the solid ranks of truth;
To clutch the monster error by the throat;
To bear opinion to a loftier seat;
To blot the era of oppression out,
And lead a universal freedom in.
And heaven wants souls—fresh and capacious souls;
To taste its raptures, and expand, like flowers,
Beneath the glory of its central sun.

—J. G. Holland.

Sonnet.

Come, said the world, thy youth is not all play,
Upon these hills vast palaces must rise,
And over this green plain that calmly lies
In peace, a mighty city must have sway.
These weak and murmuring reeds cannot gainsay
The building of my wharves; this flood that flies
Unfathomed clear must bear my merchandise,
And sweep my burdens on their seaward way.

No, cried my heart, this thing I cannot do,
This is my home, this plain and water clear
Are my companions faultless as the sky—
I cannot, will not give them up to you.
And if you come upon them I shall fear,
And if you steal them from me I shall die.

—Wallace Stevens.

A Marriage by Telephone.

He wrote a letter to a farm journal of the Middle West expatiating on the beauties of his native State. She read it and sent a letter of appreciation to the author. He lived in California, she lived in Missouri; but in these days of overland express trains it does not take long for a letter to wing its way to the coast, or for a reply to reach the sender if the recipient is a prompt correspondent. That was the beginning of the romance, but not the ending, by any means.

Other letters passed between the two, and in a surprisingly short time she received the following original epistle, which for the convenience of the reader, is transcribed into readable English minus all the idiosyncrasies of orthography and punctuation, and yet preserving the full meaning of the writer:

MT. OLYMPUS, CAL.

DEAR MARY:—You say your life is a lonely one; so is mine. What do you say to our getting married? I am thirty-five years old, as good-looking as the average man, and with your help can make you a nice home. I am proprietor-in-chief of the Mt. Olympus Sanatorium, and have one of the largest ranches in California, free of debt. Oranges and figs go to waste by the bushel all about me. I cannot get away at this season of the year, but if you say so, and will come on, we will be married here. As soon as I hear from you we will arrange about transportation. When shall I meet you with my four-in-hand? Have you any pictures of yourself? If so, I shall be glad to receive one, so that I may know you when I meet you at the station. And yet methinks I can see you even now, dear Mary. By the way, how old are you?

Faithfully,
JAMAS PARTINGTON BOONE,
Proprietor Mt. Olympus Sanatorium.

It is needless to say that Miss Mary read this ingenious love letter with great interest; indeed, it was quite a novelty, as it was the second one she had received in her entire life, and the first one in fifteen years. She therefore lost no time in replying to the invitation, for the proposal quite coincided with her views, which had always bordered on the romantic.

It so happened that she did not have a recent picture to inclose, which was just as well, she was certain; but she happened to think of one she had had taken at nineteen—twelve years before—and she sent that without any explanation. The letter read as follows:

DEAR JAMES:—Surely Providence intended us for each other. I have felt it from the first. My heart went out to you when I read your letter in the paper, and I am ready to marry you any time you say. My mother objects to my going so far away until we are joined in holy bands of matrimony. I have an aunt in San Jose, whom I have never seen. It is my intention to pay her a visit soon, and why can we not be married by telephone after my arrival there? This method is one of the latest fads in the East, I am told, and as the ceremony is just as binding we can put it to the test. At any rate, it would be more proper than for me to go to Mt. Olympus as plain Miss Barnes.

Your loving
MARY.

P. S.—I am twenty-five years old, but look much younger.

N. B.—I will pay the minister at San Jose.

When James Partington Boone received the foregoing he chuckled audibly, and then sat down at once to write to his fiance. The day and hour for the marriage were set, and all the preliminaries arranged; after that there was nothing to do but to wait.

That night James smoked his pipe longer than usual, and he sat way into the night watching the smoke curl up from his meerschaum into fanciful pictures of Mary, just as any good lover should have done.

On the following Thursday Mt. Olympus called up San Jose at the hour agreed upon.

"Is that you Mary?" said James.

"Yes," was the reply; wait just a moment till I speak to Deacon Philpotts." At that a sepulchral voice, which could only emanate from the throat of a very pious clerical gentleman, said:

"Hello, Mr. Boone!"

"Hello yourself!" was the jocular response. "You most ready at that end?"

"Yes," assented the minister, with gentle dignity; "but isn't this something out of the ordinary?"

"I don't know," drawled the rancher; "ask Mary. It's my first venture in the matrimonial line. Say, parson, you'll have to hurry up and join us, for I've got to hurry back to feed the pigs."

The reverend gentleman took the hint, and proceeded over the 'phone: "James, do you promise to take this woman for your wedded wife, to love, cherish and protect until death do you part?" etc.

"Of course," responded the rancher, testily; "that's what I'm here for."

Deacon Philpotts cleared his throat, and "Um! um! extraordinary case!" buzzed over the 'phone.

Mt. Olympus end could hear the minister propounding the same question to Mary, at the close of which she said, "I do."

"I now pronounce you man and wife," exclaimed the Deacon, as if glad the ceremony was concluded; then he proceeded with the customary congratulations, in the midst of which the inconsiderate telephone girl said, "Time's up!" and shut them off.

Two weeks later the train stopped at Mt. Olympus and a tall, blonde woman of the peroxide order alighted and began to look about her inquiringly. Any one would have guessed her age from thirty to forty, though she might have passed for middle-age. Nevertheless there was still a far-away resemblance of what had once been youth, and perhaps good looks. Her dress was somewhat faded, and her hat was not strictly a la mode. In fact, the only new article of apparel was a black jersey waist, which made her thin figure look still more attenuated. In her hand she carried a black satchel, which, like herself, was somewhat the worse for wear.

"Are you looking for some one?" asked a lounger, who was smitten with curiosity at the apparition.

"I am," was the confiding reply. "I am looking for my husband, Mr. Boone; are you acquainted with him?"

"What! Do you mean old Jim Boone?"

"I mean James Partington Boone, sir; in other words, the proprietor of Mt. Olympus Sanatorium," she exclaimed, scornfully, as she walked away.

"Whew, but she's a typical old maid!" cried the lounger; and one of his companions mimicked her by saying, "Prunes and prisms."

But no one whom she thought could be her husband appeared, and the bride began to feel anxious. There was no four-in-hand, not even an ordinary buckboard, in sight. Across the street was a building which served as a post-office, grocery and dry goods store, and as the door stood invitingly open, Mary entered to make inquiries.

"I am Mrs. Boone. I expected my husband to meet me, but he has evidently been detained," she said. "Can you direct me to his place?"

"Who do you mean? Old Jim Boone, the hermit?" queried the clerk.

"No!" she snapped. "I mean James Partington Boone, the proprietor of Mt. Olympus Sanatorium."

"Great Scott, ma'am, but old Jim is a slick 'un! Excuse me, ma'am; if you'll come with me I'll take you to Jim's—your husband's—place."

Mary's cheeks burned, and she began to be suspicious; but there was no alternative, so she accepted the offer. And thus it came about that instead of a four-in-hand the bride rode in a gig to her new home.

The man of merchandise was very talkative, and in a round-about way tried to quiz Mary; but she had very little to say as they drove up the canyon past acres of mesquit, sagebrush and chaparral.

At length they came to a barren, god-forsaken-looking place, with no signs of habitation except a tent, which was soiled and ragged, flapping discontentedly in the breeze.

The driver called "Whoa!" The woman's heart sank like lead and all her romantic notions of love and courtship fled at that moment.

"This is Jim's place," said the driver, eyeing her curiously. "Right smart, ain't it? Hello, there Jim! can't you come out and welcome your wife, you lazy old sinner?"

Whereupon James Partington Boone appeared on the scene, his clothing unkept, his gray hair matted, and presenting an altogether dilapidated appearance. The bride and groom inspected each other, and it was evident that both were disappointed.

"Deceiver!" cried Mary, tragically.

"Minx!" exclaimed James, mockingly.

Instead of the sentimental meeting the woman had dreamed over for a fortnight, they stood glaring at each other like two pugilists. The man of merchandize enjoyed it all hugely, but tactfully turned it off by saying:

"Well, I suppose you can get along without me, so I'll vamose."

At first Mary didn't know what to do, and she debated whether to go or stay. The inclination to return "to maw" was very strong, but the state of her purse was rather depleted, owing to the recent journeying. Then, too, it would never do to let the people of J—— have an opportunity to gossip. So she stayed.

They commenced housekeeping on a rather limited scale, for when the bride took an inventory of their earthly possessions she found that they consisted solely of a hammock, some bedding, one chair, a few cooking utensils, a small quantity of dishes and a table.

The explanations of both sides were sparse. "Jim" wanted a housekeeper, or rather a "tentkeeper," and he had secured one by strategy, though she came twenty-four hours earlier than he had expected, owing to some misunderstanding.

He patched his side up after the fashion of man; she did likewise after the manner of woman.

"Why, Mary, I'll be blessed if I meant to deceive you," he said. "Just show me the letter and I'll explain it." Mary got the letter out of the little black satchel, which also held the marriage certificate.

"Why, of course I'm thirty-five years old; you can see I'm not sixteen," he argued. And is'nt this nature's sanatorium, where hundreds of people recuperate in tents every year? To be sure, I am the proprietor-in-chief of this ranch, for no one else is here. Yes, and it's all paid for, for it's government land, unless Uncle Sam has been dishonest. Sure, Mary, it's

HOW TO GAIN FLESH

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true that oranges and figs go to waste all about; the well-to-do ranchers are throwing them away."

And so clause by clause he explained his letter, which Mary had not "interpreted aright." But the four-in-hand puzzled her most of all. If he had not deceived her, what did he mean?

"Oh, that's dead easy," said the wily benedict. "I don't very often wear neckties except on special occasions, and I got a four-in-hand for my wedding tie. See? And thus by constant arguing he almost convinced her that she was wholly in the wrong. But sometimes this old adage ran through her mind:

Change your name and not the letter,
Change for worse instead of better.

For twelve months Mary scrubbed, washed dishes and assisted Jim about the "sanatorium;" in other words, she helped him work the small garden which she had insisted on having, though as a rule, the heavest end fell to her lot, for Jim was constitutionally tired. At the end of the year their accumulations were considerably augmented, for in addition to a crop of potatoes and onions, Jim had been induced to lay a floor in the tent and Mary had a new baby, which was straighway christened James Partington Boone, Jr.

It would be pleasant to picture Jim as a model father, and to state that the infant prodigy was the means of a new epoch in the lives of the two people, but as this is a truthful narrative it will be necessary to adhere to facts.

After the baby's advent matters went from bad to worse. Mary was ailing most of the time, and Jim felt that the burdens of a husband and a father were too hard to bear.

One day when he was asleep in the hammock, a picture of placid content, Mary came to a decision that marriage was not altogether a blissful state, which was not to be wondered at, for she was actually hungry.

A little wail from the babe capped the climax, and she set her lips very firmly together as she gathered her few earthly possessions in a bundle. Then, without a glance in the direction of the sleeper, she took the child in her arms and left the bed and board of James Partington Boone forever.

On the way to town, as a strange coincidence would have it, the man of merchandise overtook her, and for the second time in a year she rode beside him in the very gig that carried her to "Jim's place." Her taciturnity was very noticeable, but the good-natured man had no idea that there was anything out of the ordinary wrong, attributing her silence to oddity as he afterward said "It was enough to make anyone queer to live with old Jim Boone."

Fortunately Mary had saved enough money from her vegetable sales to buy a ticket to Los Angeles, and she caught a train within two hours after leaving the abode she had called home.

At Los Angeles she secured work in a hotel, and at the end of three months had saved enough money to take her home "to maw." Meantime she had decided upon a new ruse. It would never do to return as a grass-widow; she would don the weeds of a mourner. She knew that Jim was too indolent to even trouble himself as to her whereabouts, and she would be safe in J——.

A letter preceded her which stated that she was now a widow, and her heart was so sore that life was unbearable in California. Would they welcome her home with her little James?

Of course they did, and she was considered a heroine in her black dress, crape bonnet and long black veil. Indeed, the young women of J—— almost envied "Poor, dear Mary," for had she not lived at the famous Mt. Olympus Sanatorium in California for nearly two years?

Mary's mother guessed more than she ever said; but the former vouchsafed no information, and her silence was interpreted as excessive grief. No one ever knew that on the tablets of Mary's heart was indelibly inscribed "Ye gods, but marriage is a failure."—Harriet A. Trask.

A Model Young Wife.

A young wife bought an oyster plant and set it out to grow.
Quoth she, "'Twill please my husband, who does love oysters so!
And when the oyster season comes I'll go out every day
And pick a bushel basketful, with not a cent to pay.
Oh, he shall sup on Saddle Rocks, for which he has a craze,
Or Navies, Blue Points, Shrewsburys, or even Rockaways.
And he will be so grateful and full of joy to see
How very econonical his little wife can be."

—Life.

The Highest Type of Girl is Fine Mannered.

Julia Ward Howe, famous the world over as the author of "The Battle Hymn of the Republic," and for her prominence in women's activities, writes in "Success" for February, her conviction that the representative twentieth-century American girl will be the highest type of girl the world has seen. But she also sounds a note of warning as to the cultivation of fine manners:

"In this matter of manners, we have not advanced during the last half century. We Americans do not give manners the attention they deserve. Abroad, we are acquiring the reputation of being the best dressed people in the world; but about our manners, which are even more important than dress, there is often a polite but significant silence. Our educational system should take more account of deportment, which, in a large measure, is expressive of what we represent. The social atmosphere is warned by the enthusiasm of youth. We admire and even envy the overflowing vitality of the healthy girl. But when the outpouring of this enthusiasm and vitality becomes forgetful of the feelings and opinions of others, the line between good manners and bad is crossed. Young women who are fond of outdoor sports, who can do as well as men numerous things that, in the past, men alone did, and women who are successfully competing with men in the business or the professional world, exult in power and freedom which their mothers did not have. This is excellent, but these progressive women are in danger of offending good manners, by giving their exultation and their own personalities too great an emphasis. Some of them feel that their sturdy work, or play, is too engrossing to give them time for the delicate amenities and little niceties of social life, that in my youth were held in such high esteem."

The Secret of Beautiful Rooms.

A window with a large sheet of plate-glass gives from its great space the effect of perpetual openness and out-of-door coolness. A soft divided curtain to be drawn across the sash from either side can moderate this effect when it becomes oppressive. A large unbroken sheet of glass interrupts the decorative scheme of a room and breaks the rhythm. For inexpensive curtains in a sitting room, library or dining room, the Calcutta lattice net is the most artistic and inexpensive material offered. In all tones of color, from cream white and ecru to golden orange and forest green, the melting shades harmonize with any scheme of decoration. They cost from fifty to seventy-five cents a a yard, according to the finish, either with fringe or selvage. In a bedroom there is nothing which equals in fitness the white muslin sash curtain with the pretty chintz or printed India cotton within hanging full and straight at either side.—Good Housekeeping.

"Who was Esau?" asked the Sunday school teacher, who was testing the biblical knowledge of her pupils. "Esau," replied the prompt scholar, "was the man who sold his birthmark for a pot of massage."—Pittsburg Chronicle-Telegraph.

DOMESTIC ECONOMY.

Various Methods in Which Prunes May Be Used.

NUMBER II.

PRUNADA SAGO PUDDING.—One cup prunada, two cups boiling water, three-fourths cup sago, one-half cup sugar. Soak sago in cold water (one cup) for one hour. Boil prunada, water and sugar together; add the sago to the boiling syrup. When cold serve with whipped cream.

PRUNADA JELLY.—One pint prunada, one-half pint sugar, boil together about five minutes. This makes a clear, beautiful wine-colored jelly.

PRUNE PUDDING.—To one quart of milk take four well beaten eggs and one cup of granulated sugar. Butter four quite thin slices of Vienna bread. Have ready a cupful of prunes which have simply been stewed long enough to enable you to take out the pits. Put two slices of buttered bread on the bottom of your pudding dish, then spread the prunes over them. Put the remaining slices of bread on top, pour over your custard and bake.

PRUNE TAPIOCA PUDDING.—One-half cup of tapica, three cups of cold water, one cupful of prunes, one-half teaspoonful of salt, one tablespoonful of lemon juice, one-half cup of sugar. Soak tapioca over night in three cupfuls of cold water. In the morning put tapioca and water in a double boiler and cook one hour. Put prunes in saucepan with water enough to cover them and let them simmer gently until they absorb all the water. Turn out on a plate to cool and remove the stones. When tapioca has cooked an hour stir all the seasoning in it and put a layer in the small pudding dish, then a layer of prunes, and so on, having the top layer of tapioca. Bake in moderate oven for an hour. Take from the oven and allow to partially cool; serve with cream or soft custard.

PRUNE PUDDING.—Take two dozen prunes, one-third of a package of gelatine, one quart water, one lemon, one gill sugar, liquid cochineal. Soak the gelatine in one-half pint cold water. Cook the prunes slowly for two hours, take from the liquid and remove the pits. Measure the liquid, and, if more than half a pint, boil rapidly until reduced to that amount, and, if less than one-half pint, add water. Return the liquid and prunes to the fire; color with a few drops of cochineal, add lemon juice, soaked gelatine and sugar. Stir until the gelatine is dissolved, turn into a mold and set away to harden. Serve with whipped cream or soft custard.

PRUNE SURPRISE. — One pound of prunes, soak in one cup cold water four hours, add half a cup of sugar, set on the stove and let it come to a boil. Make a batter of three cups of flour, two teaspoonfuls of baking powder, half a teaspoon of salt, a scant half cup of butter, rub into the flour, one cup of milk and one egg. Drop this in dumplings over the prunes and bake in a hot oven in a deep, square dish.

(TO BE CONTINUED.)

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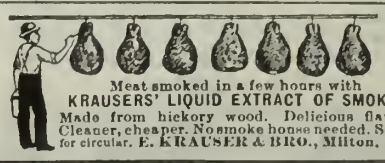

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 27, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	Mar.	May.
Wednesday	79⅝@80	79⅞@80⅛
Thursday	79¾@79¼	80⅝@80
Friday	*——@——	——@——
Saturday	79¼@79⅝	80 @80⅜
Monday	79¼@79⅝	80⅛@80⅝
Tuesday	79⅛@79⅜	80⅛@80⅛

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday	5s 10⅞d	5s 11¾d
Thursday	5s 11⅝d	6s 0⅜d
Friday	-s —d	-s —d
Saturday	5s 11½d	6s 0¼d
Monday	5s 11⅝d	6s 0½d
Tuesday	5s 11½d	6s 1 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	99⅞@ 99¼	1 05 @1 04¼
Friday	*——@——	——@——
Saturday	99½@1 00	1 04¾@1 05⅛
Monday	99¾@ 99½	1 05 @1 04½
Tuesday	99⅜@ 99⅛	1 04¾@1 04½
Wednesday	98⅞@ 99¼	1 04 @1 04⅜

*Holiday.

WHEAT.

The market has shown much the same general tone the past week as noted in preceding report, so far as actual wheat, or trading in offerings by sample was concerned. Speculative values recovered for a brief period nearly 2c. from lowest point of preceding week, but spot values had not receded correspondingly with options and consequently did not show corresponding recovery. Exporters and millers took hold sparingly, notwithstanding the market much of the time was more favorable to them than it had been for some weeks preceding, barring the tax proposition. The easier rates were about equivalent to the taxes. The tax question will soon be out of the way for another year, and it would be much better for the wheat producer if the tax on grain, as now levied, was out of the way forever. The recovery in speculative values was based on no well defined cause other than more active buying of options in the East and in Europe, probably to a great extent for the purpose of covering shorts, most operators on the bear side doubtless feeling confident that it was better to be out of the market than to be selling futures or remaining short at the low figures prevailing. Contrary to expectations, the export movement for February is not proving quite as heavy as for preceding month, and at this writing bids fair to fall about 5,000 tons under the aggregate for January, which footed up 50,140 tons. Scarcity of ships and continued stiff ocean freight rates have operated against free exports. The harbor is about bare of disengaged ships suitable for grain loading. Another ship has been added to the engaged list to load wheat for South America, the rate being 32s. 6d. to Valparaiso or Talcahuano direct. The United States visible supply east of the Rockies was reported at 57,536,000 bushels, showing a decrease of 146,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.00@98⅞c.

December, 1901, delivery, $1.05@1.04.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at 98⅞@99¼c; December, 1901, $1.04@1.04⅜.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	95	@ 96¼
Oregon Valley	95	@1 00
Washington Blue Stem	95	@1 02½
Washington Club	95	@1 00
Off qualities wheat	90	@ 92½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s4½d@6s5d	6s2d@6s2½d
Freight rates	40@41¼s	37½@38¾s
Local market	$0 98¾@1 01¼	$0 96¼@0 98¾

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is not much doing on local account, but inquiry for export is fairly active, and for desirable shipping grades the market is moderately firm at the quotations, which remain at same range as last noted. Spot supplies are of only moderate volume. The local demand is expected to show improvement in the near future.

Superfine, lower grades	$2 25@2 40	
Superfine, good to choice	2 50@2 75	
Country grades, extras	3 00@3 25	
Choice and extra choice	3 25@3 50	
Fancy brands, jobbing	3 50@3 65	
Oregon, Bakers' extra	2 75@3 15	
Washington, Bakers' extra	2 75@3 25	

BARLEY.

The market has developed no changes of moment since last review, continuing in the main more favorable to the buying than to the selling interest, especially for other than most select shipping and brewing grades. Quotable values throughout remain practically as last noted, and are being fairly well maintained on best qualities, but for the more ordinary kinds of feed the tendency is against the selling interest. There is little other than local demand for feed barley, and much of this inquiry is satisfied by Port Costa screenings, or the offal of barley worked through cleaning machines for the purpose of segregating for shipment the bright and sound stock. Option market was quiet and presented no new or especially noteworthy features.

Feed, No. 1 to choice	71¼@	73¾
Feed, fair to good	70 @	71¼
Brewing, No. 1 to choice	80 @	85
Chevalier, No. 1 to choice	97½@1	02½
Chevalier, No. 2	85 @	90
Chevalier, poor	70 @	75

OATS.

Although stocks and offerings have shown considerable increase, as compared with some weeks preceding, the market has not developed any special or pronounced weakness. To have effected free sales, however, of other than most select qualities, the acceptance of lower figures than lately nominally current would have been necessary.

White Oats, fancy feed	1 45	@1 50
White, good to choice	1 32½@1	40
White, poor to fair	1 20	@1 27½
Gray, common to choice	1 20	@1 37½
Milling	1 45	@1 50
Surprise, good to choice	1 45	@1 55
Black Russian	1 15	@1 35
Red	1 20	@1 45

CORN.

Receipts and offerings are light of all descriptions. While the demand is not brisk at full current rates, there is no apparent inclination on the part of holders to accept materially lower figures than lately current.

Large White, good to choice	1 15	@1 17½
Large Yellow	1 15	@1 17½
Small Yellow	1 50	@——
Eastern, in bulk (carload lots)	1 08	@1 10

RYE.

Market presents no encouraging feature for sellers, being dull and devoid of strength.

Good to choice, new	80	@ 82½

BUCKWHEAT.

Scarcely anything doing in this cereal. Beyond the views of local holders, there is nothing upon which to base quotations.

Good to choice	2 00	@2 10

BEANS.

All white varieties continue in very limited supply, and at the stiff asking rates now current there is not much inquiry from any quarter. That values will go materially higher, or that there will be other than a quiet market for white beans during the balance of the season, is not probable. Colored beans are being in the main steadily held, although there is not much doing in them. Stocks and offerings are principally Pinks and Bayos. Local stocks of Limas are of small volume, admitting of only light jobbing operations.

Pea, fair to good, 100 lbs	——	@——
Small White, good to choice	4 75	@4 90
Lady Washington	4 10	@4 25
Butter	4 25	@4 50
Pinks	2 15	@2 25
Bayos, good to choice	2 65	@2 75
Reds	3 00	@3 25
Red Kidney	4 00	@4 25
Limas, good to choice	5 65	@5 75
Black-eye Beans	2 75	@3 00
Horse Beans	1 75	@2 00
Garbanzos, large	2 00	@2 25
Garbanzos, small	1 25	@1 75

DRIED PEAS.

Little doing in this line. Choice Green are inquired for and are salable to fair advantage. Niles Peas are receiving no noteworthy attention.

Green Peas, California	2 75	@2 85
Niles Peas	1 75	@1 90

WOOL.

Dullness is prevailing in wool town and it is not likely that there will be any special activity experienced there for a month or more. Some dealers have already sent buyers into the interior, however, to negotiate for Spring wools, although it will be likely several weeks before shearing will begin. Values on wools now on hand are poorly defined, owing to prevailing dullness in same, and quotations are necessarily largely nominal, but are considered slightly under rather than over the figures at which wholesale purchases could be effected.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarse to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

Beyond a small trade between jobbers and consumers, there are no evidences of any business in hops worthy of mention. Dealers and brewers appear to be fairly stocked. There are few hops offering from first hands, and those mostly off quality, while only choice to select are wanted, and for this sort not very stiff prices are obtainable at this date.

Good to choice 1900 crop	13½@16	

HAY AND STRAW.

There is no improvement to record in the condition of the hay market. While quotations are unchanged, the market is not firm, full current rates being more in accord with asking figures than with prices readily obtainable, offerings being ahead of requirements. Straw ruled fairly steady.

Wheat	8 00@12 50	
Wheat and Oat	8 00@11 50	
Oat	7 00@11 50	
Barley	6 00@ 9 50	
Volunteer	5 00@ 7 00	
Alfalfa	8 00@ 9 50	
Stock	5 00@ 7 00	
Compressed	8 00@12 50	
Straw, ₱ bale	40@ 47½	

MILLSTUFFS.

Bran is not in heavy supply and is in very fair request, commanding tolerably firm figures, quotable rates remaining about as last noted. Middlings and Shorts are ruling steady, with demand not very brisk, but offerings of quite moderate proportions. Rolled Barley and Milled Corn were held at practically same figures as preceding week.

Bran, ₱ ton	15 50@16 00	
Middlings	17 00@18 00	
Shorts, Oregon	15 50@17 00	
Barley, Rolled	16 00@16 50	
Cornmeal	25 50@ ——	
Cracked Corn	26 50@ ——	

SEEDS.

Market for all kinds of seeds quoted herewith is at present ruling very quiet. There are no offerings just now of any variety sufficient to admit of wholesale operations. In quotable values there are no changes to record.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag market is moderately firm, both for spot stocks and for goods to arrive, with prices for immediate offerings about the same as for next season's delivery. A lot of Calcutta Grain Bags held here in bond was lately placed at same figure asked for this year's importation, July delivery. In other bags and bagging there is nothing of consequence doing.

Calcutta Grain Bags, buyer June-July	6⅝@—
Calcutta Grain Bags, spot	6½@—
San Francisco Grain Bags, 22x36, spot	6½@—
State Prison Bags in lots of 2000, ₱ 100.5	65 @—
Wool Sacks, 4 lbs	—@32½
Wool Sacks, 3½ lbs	—@28½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6⅝@ 7¼

HIDES, PELTS AND TALLOW.

Much the same conditions prevail in this market as last noted. Hides are commanding fairly steady rates, with arrivals rather light in the aggregate. Pelts are meeting with custom at current figures about as rapidly as received. Tallow is not in excessive stock, being in very fair demand, both for shipment and on local account.

HONEY.

Bright prospects for coming crop give a much easier tone to the market than has existed at any previous date the current season. There are no large spot supplies, but demand is slow, and holders are anxious to effect a clean-up.

Extracted, White Liquid	6½@ 7	
Extracted, Light Amber	5 @ 6	
Extracted, Amber	4½@ 5	
White Comb, 1 lb frames	13 @14	

Amber Comb	11½@12½	
Dark Comb	8 @ 9	

BEESWAX.

Immediate offerings are small and values are without quotable change. Most of the inquiry is on export account.

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

Beef is offering in very limited quantity and is meeting with a firm market. Mutton is not arriving freely and is commanding good figures, which is likely to be the case for some months to come. Veal is selling at a wide range, with the firmness of the market confined mainly to large. Lamb is in good request at stiff prices. Hogs have been bringing fully as good figures as were current at date of last review.

Beef, first quality, dressed, net ₱ lb	7¾@ 8	
Beef, second quality	7½@ 7¾	
Beef, third quality	6½@ 7½	
Mutton—ewes, 9@9½c; wethers	9½@10	
Hogs, hard grain fed, medium	6½@ 6¾	
Hogs, small, fat	6⅝@ 6¾	
Hogs, large, hard	5¾@ 5⅞	
Hogs, feeders	5¼@ 5½	
Hogs, country dressed	7½@ 8	
Veal, small, ₱ lb	7 @ 9½	
Veal, large, ₱ lb	7 @ 8½	
Lamb, yearlings, ₱ lb	11 @—	
Lamb, spring, ₱ lb	11½@12½	

POULTRY.

There were only moderate receipts of most descriptions of poultry, both domestic and Eastern, and market for nearly all kinds has inclined in favor of sellers during the greater part of the time under review. Turkeys were about the only noteworthy exception, these being offered rather freely most of the week, as compared with the demand. Gobblers were in especially excessive stock, the limited demand which existed for Turkeys being mainly for Hens. There was a very fair demand for all Chickens, young and old, in prime to choice condition.

Turkeys, live hens, ₱ lb	13	@ 14
Turkeys, live gobblers, ₱ lb	11	@ 12
Turkeys, Dressed, per lb	12	@ 13
Hens, California, ₱ dozen	4 00	@5 50
Roosters, old	4 00	@4 50
Roosters, young (full-grown)	6 00	@6 50
Fryers	5 50	@6 00
Broilers, large	5 00	@5 50
Broilers, small	3 50	@4 50
Ducks, old, ₱ dozen	4 00	@5 00
Ducks, young, ₱ dozen	6 00	@7 00
Geese, ₱ pair	1 50	@2 00
Goslings, ₱ pair	2 50	@3 00
Pigeons, old, ₱ dozen	1 25	@1 50
Pigeons, young	2 50	@2 75

BUTTER.

With free receipts, and demand hardly equal to immediate offerings, the market since last review has tended steadily in favor of the buying interest. Especially were stocks excessive of common to defective qualities, such being in decidedly limited request. For a few favorite marks of superior quality higher prices than quoted were realized.

Creamery, extras, ₱ lb	19	@—
Creamery, firsts	17	@—
Creamery, seconds	—	@—
Dairy, select	17	@—
Dairy, firsts	15	@16
Dairy, seconds	12	@—
Dairy, soft and weedy	—	@—
Mixed store	11	@—
Creamery in tubs	17	@18
Pickled Roll	17	@18
Firkin, California, choice to select	17	@18
Firkin, common to fair	15	@16

CHEESE.

Market presents a weak tone, which is mainly on account of buyers holding off, anticipating lower prices. Spot supplies are of very moderate proportions, still

there is a general desire to prevent accumulations and to keep stocks moving.

California, fancy flat, new	9½@—
California, good to choice	9 @ 9½
California, fair to good	8½@ 9
California Cheddar	— @—
California, "Young Americas"	9 @10

EGGS.

Prices have been on the down grade, with arrivals on the increase and the demand failing to show corresponding improvement. Shipping orders were lighter than for a week or two preceding, owing to eggs becoming more plentiful in other sections. It is likely that values here are close to bedrock. Storing in ice plants will probably begin the coming week.

California, select, large, white and fresh.	13 @14
California, select, irregular color & size.	12 @13
California, good to choice store	12 @13
Eastern, as to section and grading	— @—
Eastern, cold storage	— @—

VEGETABLES.

Onions were in increased supply, mainly from Oregon, although a small quantity arrived from Australia. The market is now easier in tone than immediately following last review, but values are still at a higher range than last quoted. Other Winter vegetables were offered sparingly and brought as a rule good prices. Spring vegetables made a better showing than preceding week, but desirable qualities did not go begging for custom, nor was it necessary to accept what could be termed low figures.

Asparagus, ℔ lb	7 @ 15
Beans, String, ℔ lb	10 @ 15
Cabbage, choice garden, ℔ 100 lbs	1 00 @1 25
Cauliflower, ℔ dozen	50 @ —
Egg Plant, ℔ lb	12½@ 15
Garlic, ℔ lb	4 @ 5
Onions, Yellow Danver, ℔ cental	3 50 @4 00
Peas, Sweet, garden, ℔ lb	5 @ 7
Peppers, Green Chile, ℔ lb	12½@ 15
Rhubarb, ℔ lb	5 @ 8
Squash Summer, ℔ box	1 50 @1 75
Squash and Pumpkin, ℔ ton	25 00 @30 00
Tomatoes, ℔ crate	50 @1 25

POTATOES.

Supplies of choice to select Burbank Seedlings, or offerings of any very desirable table potato, are not heavy, and market for stock of this description is tolerably firm. Some extra select sell above best figures quoted. Ordinary qualities are in liberal stock and are offering at generally easy rates, with movement slow. Oregon Garnet Chile are cleaning up a little better, but at no improvement in prices. Oregon Peerless continue in very light stock. Sweet Potatoes were in ample supply for the demand, and market for them was barely steady.

Burbanks, River, ℔ cental	30 @ 60
Burbanks, Petaluma-Tomales, ℔ ctl.	35 @ 60
Burbanks, Salinas, ℔ cental	75 @1 10
Burbanks, Oregon, ℔ cental	60 @1 00
Early Rose	60 @ 70
Garnet Chile, ℔ cental	65 @ 75
Peerless, ℔ cental	65 @1 00
Sweet Potatoes, Yellow, ℔ cental	75 @1 00

The Fruit Market.

FRESH FRUITS.

In the line of fresh deciduous fruits, Apples are the only sort now offering, and the market is not burdened with stocks of same. Fancy Red Apples are too scarce to quote; they would bring stiff figures in a small way. Strictly fancy Pippins are commanding as high as $2 per box. Although Apples of common quality are in light stock, this description cannot be said to sell to good advantage, meeting with very little inquiry.

Apples, fancy, 4-tier box	1 50 @ 2 00
Apples, good to choice, ℔ 50-lb box.	85 @ 1 00
Apples, common to fair, ℔ 50-lb box.	40 @ 75

DRIED FRUITS.

There is a moderate business doing in cured and evaporated fruits on local account, and a few carloads are moving outward, mainly assorted lots, but trade as a whole is light and unsatisfactory, and stocks are being moved too slowly for a healthy tone to prevail or for the development of firmness. Quotable rates remain practically as last noted, but full figures named represent but little more than asking prices, with concessions to buyers the order of the day. There are enough holders willing to make concessions, rather than miss sales, to accommodate all the immediate demand for every description offering. There is not much strictly fancy fruit now on hand, especially of Apricots and Pears, but good to choice of all varieties known to this market are well represented in remaining stocks. Peaches have been receiving, perhaps, the most attention, with bids up to 4½c. for large, bright, meaty and well cured stock. Pears other than fancy had to go at low figures to meet with custom, it being the exception where over 3½c. could be realized, and if the fruit was not at least fairly choice this price was unobtainable. Close cash buyers had no difficulty in securing evaporated and sun-dried Apples, common to medium grades of Apricots, Plums and Figs at easy rates and at less than extreme quotations. Prunes continue to be sold under Association prices, and in sufficient quantity to cause the assertion to be made by some handlers that present offerings include some stock which was supposed to have been in the Association. It is estimated that fully 70,000,000 lbs. California prunes have yet to be disposed of, a large proportion of the same being small sizes.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½@ 6
Apricots, Royal, choice, in sacks, ℔ lb	6½@ 7
Apricots, Royal, fancy	8 @ 9
Apricots, Moorpark	9½@11
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	2½@ 3½
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, choice	4 @ 4½
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, halved, fancy.	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, White and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	4 @ 5
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	1½@ 2½
Figs, White	2½@ 3½
Peaches, unpeeled	3 @ 5
Pears, prime halves	2 @ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

Values in the local market are being maintained at unchanged quotations, there being no supplies outside of the Association. The movement is fair, considering the time of year, but mainly in seeded raisins and Pacifics.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Orange market was heavily stocked with common qualities, while strictly choice to fancy fruit was offered very sparingly. The weather was favorable to selling interest, but the quality of most of the fruit offering operated against the development of firmness. Lemons were in fair demand, with prices unchanged, there being no scarcity of supplies. Limes continued scarce and high.

Oranges—Navel, ℔ box	75@2 00
Seedlings, ℔ box	65@1 00
Tangerines, ℔ half box	1 25@1 75
Grape Fruit, ℔ box	1 00@2 00
Lemons—California, select, ℔ box	2 00@2 25
California, good to choice	1 50@1 75
California, common to fair	75@1 25
Limes—Mexican, ℔ box	7 00@8 00
California, small box	—@—

NUTS.

Almonds are offering in moderate quantities at concessions, holders wanting to close out stocks. Walnut market is steady for best qualities, but quiet. Peanuts are unchanged.

California Almonds, shelled	18 @22
California Almonds, paper shell, ℔ lb	12 @13
California Almonds, soft shell	9 @11
California Almonds, hard shell	6 @ 7
Walnuts, White, soft shell	7½@ 9½
Walnuts, White, California, standard	7 @ 9
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

Market is decidedly firm and gives promise of so continuing for some time to come. Dry wines of last year's vintage remain quotable at 19@22c per gallon, with not much offering at this range. Growers are now carrying very little wine. Stocks in the hands of dealers are by no means heavy. The outlook for the wine interest, so far as the market for the same is concerned, is more encouraging for producers than it has been for a long time.

California Dried Fruit at New York.

NEW YORK, Feb. 27.—Evaporated apples, common, 3¾@4¾c; prime wire tray, 5@5¾c; choice, 5½@6c; fancy, 6@7c.

California Dried Fruits.—Market is inactive at nominally unchanged values.

Prunes, 3¼@8½c.
Apricots, Royal, 7½@12c: Moorpark, 9@15c.
Peaches, unpeeled, 6½@10c; peeled, 14@18c.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR WEEK ENDING FEBRUARY 12, 1901

667,757.—CATTLE GUARD—W. R. Allen, Hoquiam, Wash.
667,758.—NUT LOCK—W. R. Allen, Hoquiam, Wash.
668,081.—LUBRICATOR—P. Bartlett, Spokane, Wash.
668,084.—ANIMAL TRAP—C. C. Bowen, Santa Monica, Cal.
668,085.—ANIMAL TRAP—C. C. Bowen, Santa Monica, Cal.
667,969.—ASSAYING DEVICE—A. Campbell, Surf, Cal.
667,840.—RESPIRATOR—S. Guthrie, S. F.
667,700.—SPIKE—T. J. W. Hicks, Prescott, Ariz.
668,102.—MOP WRINGER—J. H. Johnson, Silverton, Or.
667,943.—CURTAIN HANGERS—E. F. Kaiser, Fresno, Cal.
667,785.—COMPASS—A. Lietz, S. F.
667,786.—COMPOSITION OF MATTER—F. A. Lobert, National City, Cal.
667,923.—CORSET—Lida S. Reed, Bakersfield, Cal.
667,833.—POLE SOCKET—C. Vanarsdall, Enumclaw, Wash.
667,755.—CRATE—W. H. Wright, San Jose, Cal.
667,756.—GAS CUT-OFF—R. Wynall, S. F.

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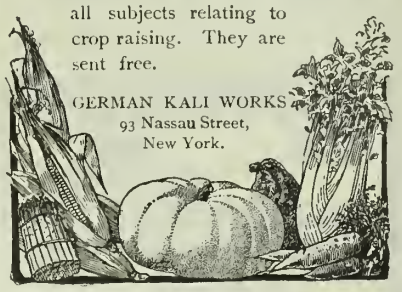

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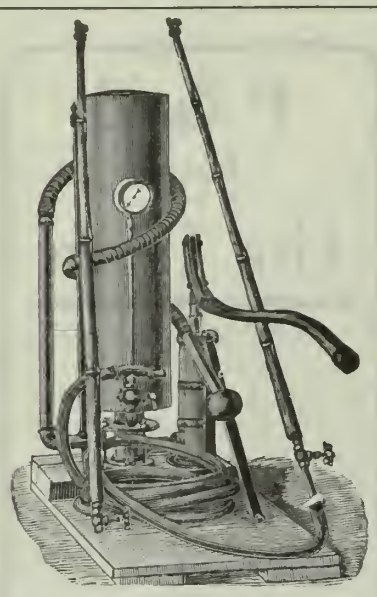
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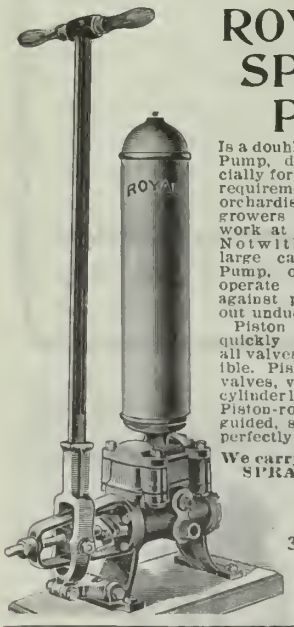
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Discing Alfalfa.

H. M. Cottrell, of Kansas Experiment Station, has given an account of cultivating alfalfa which may be suggestive to California growers:

Our first experience in discing alfalfa was in 1898. A field had been seeded to alfalfa in the dry year of 1894 and a poor stand secured. In 1897 this alfalfa was heavily pastured by hogs. The hogs were taken off early in the fall and a heavy growth of crab grass came up. The crab grass was so thick and the stand of alfalfa so thin that it was not worth keeping. Late in March, 1898, this field was harrowed with a disc harrow, the discs sharp and set at as great angle as possible. It was immediately cross disced with the discs set the same way. The ground was thoroughly pulverized and the alfalfa apparently destroyed. It soon started, branched out thickly, and we made three good cuttings from that field that summer.

In 1900 we went a step further in discing alfalfa. The fields of alfalfa, two years old, were disced. One field was disced March 28, the first cutting for hay made May 31, disced June 6, the second cutting for hay made June 25, disced June 27, the third cutting of alfalfa made August 13, and the alfalfa disced for the fourth time August 20. The last cutting of alfalfa was made September 13. This shows four discings and four cuttings of alfalfa on upland in a dry year.

Another field of alfalfa was disced and cross-disced March 27. The first cutting of alfalfa was made June 4 and the second discing June 6. Through July and the early part of August, the alfalfa was cut from day to day and fed green to dairy cows to help out dried-up pastures. August 20, the field was disced, and October 3, the last cutting of alfalfa made.

The alfalfa in both fields made fine late fall growth and went into the winter in good condition.

The stand of alfalfa on both fields disced in 1900 was good. A harrow with sharp 16-inch discs was used, the discs being set at a slight angle, just sufficient to turn the soil over, and the harrow was weighted to make the discs split the alfalfa crowns to a depth of 2 inches. The discing split the alfalfa roots and this made them throw out many new shoots. The discing made an earth mulch over the field and prevented the evaporation of water so rapid in a dry time from an alfalfa field just after being cut. The discs were set so that they barely turned the soil over and, running at a depth of 2 inches, they turned the roots of the crab grass and weeds up to the sun which killed them. These disced fields were clean and free from crab grass in the fall.

We have not disced one-year-old alfalfa. From these experiments, we feel safe in recommending discing all alfalfa of two years or more standing. Make the first discing early in the spring and then disc immediately after each cutting. If the stand of alfalfa is fair to good, set the discs as we did in the experiments made in 1900. If the stand is poor and the growth of crab grass thick, set the discs to cut deeply. Discing is of as much value to alfalfa as cultivation is to corn.

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His summary is as follows:

	DeLaval Separator.	U. S. Separator.
Milk received	5605 lbs.	3952 lbs.
Average speed	87½°	89°
Average speed	5825	8025
Total loss of fat	4.02	1 84
Loss per 100 lbs. of fat	1.55 lb.	.87 lb.
Total loss in cash	$1.15	$0.42

L. P. LACOURSIERE,
(Government Butter and Cheese Inspector.)
Sworn to before me Nov. 21, 1900.
T. E. LANONETTE, T. P. ex of C. C. Ste. Anne.

NOTICE.—The DeLaval lost $1.15 in separating 5605 lbs. of milk, or .205 on 1000 lbs., while the U. S. lost 42 cents on separating 3952 lbs. of milk, or only .106 on 1000 lbs.; which shows that the DeLaval lost in actual cash practically twice as much as the U. S.

In other words, a Creamery separating 10,000 lbs. milk daily *would save in a year in butter fat alone by using the U. S. Separator $361 35 that would be lost by using the DeLaval Separator.*

The President and Directors, after carefully considering the Judges' report, *decided to purchase a No. 0 Improved U. S. Separator.*

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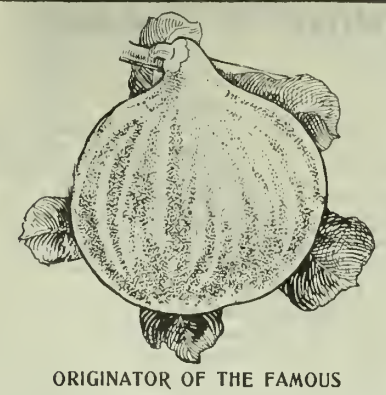

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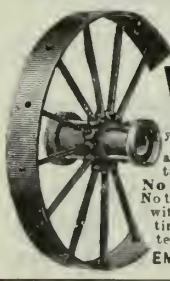

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Tulare Grange.

TO THE EDITOR:—A special meeting of Tulare Grange was held on Feb. 23 for work. A class of five received the first and second degrees. After the conferring of the degrees, Prof. D. T. Fowler addressed the Grange on "The Rochdale Principle, Its Advantages and Its Benefits to the People." He gave a short outline of the principle. In 1844 it was commenced with a combined capital of £28, doing business two days in the week. It now does one-fifth the retail business of England; its dealings—buying and selling—are cash, strictly. It has a paid up capital and sinking fund. It pays an agreed interest on the paid up capital, sets aside an agreed per cent for reserve fund, and the remainder of the profits are divided among the customers, in proportion to the purchases. It imports and exports; it provides convenient homes for artisans and laborers. Of all co-operative plans devised, it is preeminently the most successful. About thirty stores on this plan are now open in California, with a wholesale store in San Francisco. The Grange appointed a committee to consider the plan and report March 2.

J. T.

Lodi Grange.

On Feb. 20 an interesting session was held and the following officers were installed:

W. H. Tredway, Master; Otto Spenker, Overseer; E. E. Ferdun, Lecturer; J. A. Anderson, Steward; John Thompson, Assistant Steward; Mrs. John Thompson, Lady Assistant Steward; Mrs. L. Howe, Chaplain; E. Fisk, Treasurer; J. D. Huffman, Secretary; E. G. Williams, Gate Keeper.

Worthy Master Worthen and State Organizer Cornell were with the Grange at the session of Pomona Grange.

The Sentinel says: Organizer Cornell will take up the Grange work in this neighborhood and will revive interest in the Order, if possible. It is believed by the local members that this can be done, and that a number of new members can be secured. A great many former members promise to renew their connection with the Order if there is prospect of the meetings being made interesting.

Santa Rosa Grange.

An important meeting of Santa Rosa Grange was held on Saturday in that city. George Conners was elected Master of the Grange to succeed M. B. Mac, who has gone to Honolulu. James Ellis was elected to fill the office of Steward and Mrs. E. A. Green was chosen Ceres.

A number of resolutions were passed, including one favoring the abolition of the board of harbor commissioners.

S. T. Coulter, Harvey Gregory and M. Townsend were appointed a committee in the matter of the proposition on foot regarding the division of townships. There was a good attendance of members of the Grange present at the meeting.

THOSE who delight in growing flowers can secure without cost a book that tells about flowers and vegetables, how and when to plant, how to cultivate and secure results from the garden. Vick's Garden and Floral Guide for 1901, published by James Vick's Sons, Rochester, N. Y., will be sent free to those writing for it and mentioning which plants most interest them.

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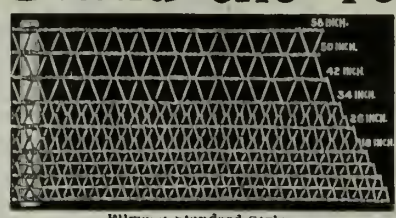

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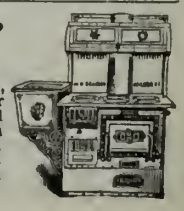

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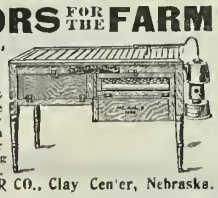

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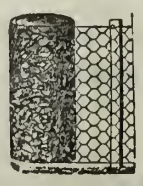

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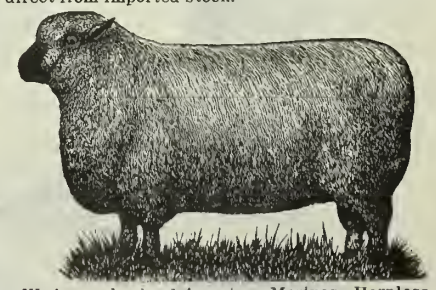

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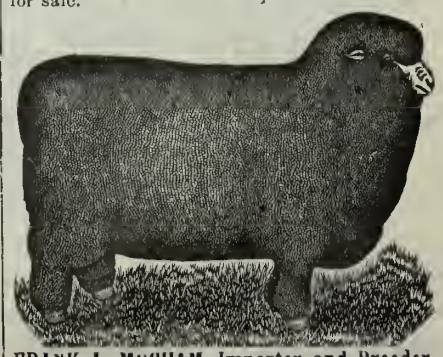

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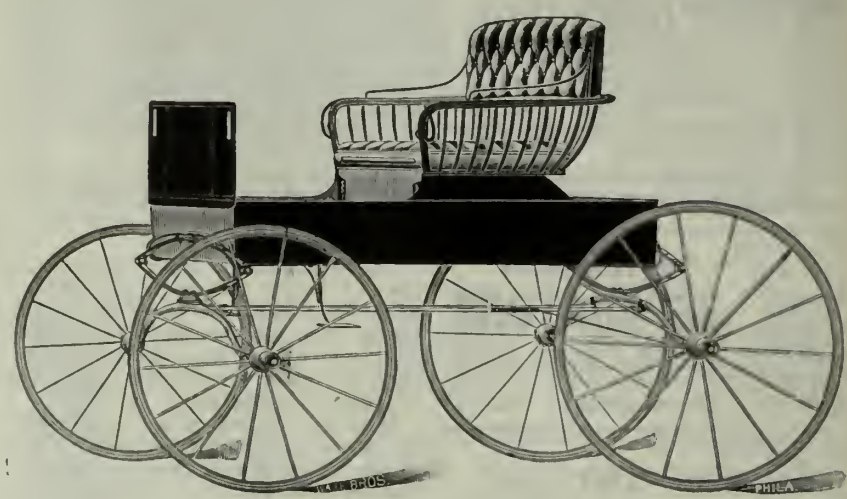

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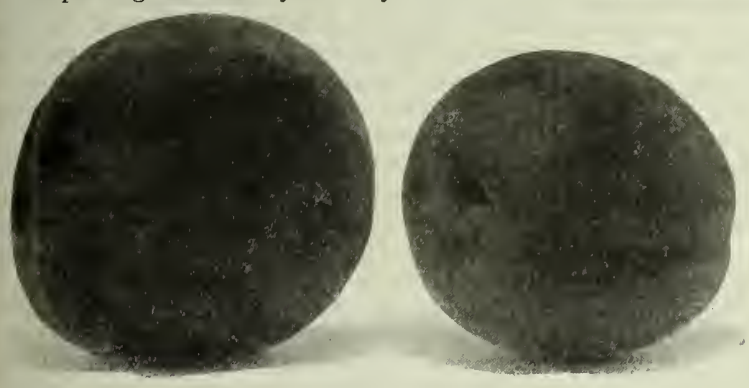
THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 10. SAN FRANCISCO, SATURDAY, MARCH 9, 1901. THIRTIETH YEAR. Office, 330 Market St.

A California Plum Pudding.

We stir up on this page several very interesting plum prodigies which Mr. Luther Burbank still has in his horticultural strong box, but which may reach the public at some future time. We have made them into a pudding because they are very much mixed in their nature and can hardly resent the agitation of the editorial ladle.



The Plumcot.

The plumcot is a combination which Mr. Burbank has effected of the Japanese plum and the apricot, and the result is as new and distinct in its character as though it had been handed down from another planet—to use the originator's words. Mr. Burbank has secured several of these crosses, and he proposes to hold them all to himself for the present. The one shown in the picture has yellow flesh; some of them have deep crimson, pink and white flesh and they are both free and clingstones. All have the general form of an apricot and the same general outside appearance, but often more highly colored than either a plum or an apricot with a skin uniquely soft, with a slight silky down and a slight bloom. The seed often resembles a plum pit, but not always. A line of rich flavors is developed, which bid fair to be a surprise to fruit eaters. There is still enough unfinished about the tree to lead Mr. Burbank to proceed with his work on them, and some of the crosses must wait improvement in this respect before he will part with them.

Another striking direction of Mr. Burbank's unfinished work lies in the production of prunes and plums without a stony covering to the kernel. He seems disposed to give us a prune stuffed with an almond right from the tree. How far this undertaking has proceeded is shown by one of the pictures upon this page. The kernel is seen uncovered and nestling in the pulp. The fruit has the general appearance of the common California French prune, but is larger; it also has less sugar than may be desirable, but the break in the right direction has been secured and this is the more important affair. Mr. Burbank has a still farther advance which he describes as large, early and sweet, and which has neither seed nor stone. The trees are very vigorous and handsome, with silky down on the wood, prominent buds and large, roundish leaves. None of this line of creations is yet available to the public.

The Stoneless Plum.

A veritable plum duff is found in the last fruit shown on this page, which is a new, second generation combination cross of Hawkeye, Hammer, Milton, Wyant, Wayland and Satsuma. The branches of this variety droop like the Russian Weeping mulberry. The wood is firm, wiry, dark blue—almost black with numerous white dots. The fruit, which hangs in amazing profusion on the branches, wreathing them in plums to the ground, is unusually handsome and of the finest quality. The flesh is crimson, pit exceedingly small, skin deep purplish crimson, nearly half covered with large white dots with a white bloom. This promises to be one of the best of the hardy hybrid plums, and will naturally meet greatest interest where very hardy things are essential and where buildings on the wild American plum foundation are more fashionable than in California.

The Original Burbank Tree.

Perhaps the only straight goods on this page is the original tree of the Burbank plum. Great interest attaches to this veteran because it is the original tree from Japan of that variety which is now of world-wide fame. It is sixteen years of age. It has never failed to produce a full crop of good fruit. This picture was taken just after the first thinning and the ground under the tree is covered two deep with the plums. All the millions of Burbank plum trees in the world came from this tree, which takes its present form from the severe cutting for buds and grafts which it experienced in its youth.

Plumcot Cross-Section.

A Hardy Criss-cross.

The lack of fruit cars is working great hardship in the orange districts at the south. At a meeting held at Covina last week all the leading fruit firms of the valley were represented. Only ten empty cars had arrived at Covina for six days and the situation had become serious. The actual loss through rot has been 20%, and much fruit has had to be repacked. It was stated that the railroad must ship at the rate of twenty cars a day for the next forty days if the crop is to be saved. A telegram signed by all the shippers demanding more cars was sent to the railroad officials in Los Angeles and a committee was charged with chasing up the telegram.

The Prune Association proposes to push its contract rights. Suits have been brought against growers in Shasta county, alleging that the defendants assigned their fruit to the Association and since then have violated their contract by selling the prunes thus transferred to persons outside the Association. The purpose of the suit is to either recover the prunes or the money. Warren is made defendant in both cases, as he bought the prunes. This is the beginning of a campaign against members who, thinking the Association too weak to defend its rights, have attempted to violate their contracts. The proposition to push prunes proceeds promisingly. The San Jose Farmers' Club held a prize competition for the best cooking recipes last week. There were prunes in every conceivable style—from plain stew to souffle and pie, prune brown bread and ices and pickles and salads. One hundred and one different kinds of cooked prunes were entered in the contest.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, March 9, 1901.

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The Week.

Again we have had a week of high heat and a considerable movement of dry winds. Fruit bloom has come on with a rush and growth of grass and grain has been almost measurable with the eye as it proceeded. Snow has gone out of sight on the mountains as the oldest inhabitant has not previously observed it, and the water has shown up in great valley lakes and overflowing rivers, which have made life uncomfortable for some lowland people. There has been some quite serious levee breaking, but nothing of flood dimensions, for while the skies are dry the rivers are left to do their best with the mountain waters. Uplands are drying too fast under the touch of the north winds, and it will not be long before showers will again be welcome to release the grain from the crust and to promote orchard pulverization.

Wheat has been rather slow since our last report, but not changed in price. Three clearances have been made—two ships to Europe and a steamer cargo largely wheat and flour for South America. Two ships are now loading wheat for the same direction—the west coast of South America, which is doing more than usual in this line, which is a good thing. Barley is unchanged; holders are asking more, but there is little doing; meantime rolled barley—largely screenings from export barley—is selling at lower rates. Oats are dull with a downward look, but not lower. Corn is quiet at old figures. Beans are also quiet, with a little higher asking, perhaps, but little movement; stocks are light. Bran is lower. Hay is being held at old prices, but there seems to be a lower tendency. Beef is steady and mutton a little easier; hogs are firm—mostly Eastern. Butter is weak and downward; cheese is easy, but not lower. Eggs are steady; they seem to have reached bedrock, as all now offered are being taken. Poultry is easier, through warm weather and increased receipts; the supply is largely Eastern. Potatoes are quiet and weak and in large supply. Onions are lower; too many came in at the recent high prices. Apples are almost out of sight and fancy fruit brings very high prices. Oranges are in deluging supply and poor quality; ten to thirteen cars have been auctioned, sometimes hardly above cost of packing and boxes; the better fruit is selling away from the auction at fair prices. Lemons are firm and more is asked for choice. Dried fruit is slow. The prune market is hanging on the action of the Cured Fruit Association, which is supposed to be meditating some new stand on prices. Almonds are easy and in advance of present demand, while walnuts are steady and in good shape. Wool is flat here. Honey is trying to clean up in view of better crop of new which is anticipated.

Concerning the serious car famine in the orange districts at the south and the energetic protests of the growers, to which reference is made on the first page of this issue, there comes from Los Angeles an explanation which we suppose originated with the railway people. It seems to show that the trouble cannot be immediately overcome. The statement is that the various companies have a total of 7795 refrigerator cars, including emergency cars and the entire equipment fit to ship fruit in. In February 3303 cars loaded with citrus fruit left the State, and nearly all went during the last half of the month, after the rains were over. Probably not one of these cars has started back to California yet. During January 2700 cars were sent out. This is a total of 6003 for two months. The shipments for four months since November 1st are 8820 carloads. For January and February the shipments this year were nearly 2000 carloads more than last year, an increase of nearly 33⅓%. This increase came very largely in February, and the greater part of it in the last half of the month. From these figures it is argued that there are not cars enough to take care of the season's crop. The bulk of the crop is Navels, and these must mostly be marketed in three months, January, February and March. Not half the Navel crop has been shipped yet. It seems to be inevitable that many carloads will rot in the orchards on account of the lack of transportation facilities. This seems to be the common luck of the farmer. When he gets a big crop it is worth little for he cannot get it to market. There ought to be some way to get this fruit forward and the orange growers are about the best people we have in the State for self-help in trying times. They may pull themselves out of this hole in good measure at least.

We have just received from the secretary of the National Dairy Union a full statement of the reasons why the Grout bill, putting a large tax upon yellow oleomargarine, did not pass the Senate during the closing days of the session at Washington. It seems that the oleomargarine played for delay and started in to talk the bill to death. The Senate committee sat on an average of five hours a day for fifteen days listening to the stuff that the oleomargarine makers had schemed to get before them. Then they pushed the report and got the bill before the Senate. It was, however, so late in the session that the Cuban and Philippine and other exciting matters had to take precedence and the Grout bill was not reached. The secretary gives assurance that the bill did not give way, however, until its friends were thoroughly satisfied that it would be taken up and promptly passed at the next session. It seems clear that the Grout bill will become a law next winter if the present interest is kept up, and, with the work done and continued interest, nothing can stop it. The oleomargarine men are said to acknowledge that in the Senate the bill has practically a two-thirds vote, while it was demonstrated on Dec. 7th that it had more than that majority in the House. While some of the work will have to be done over, the bulk of what has been done is just as well done for the next session as it would have been for this.

We can but advise our contemporaries of the San Francisco dailies to go very slow on the adaptability of this State to rice growing. There may be good places for it, but present evidence is that some places indicated by current comments are not good. For instance, the Call says:

But the marvel is that California capital should go away from home to raise rice. The tule lands of the delta of the San Joaquin and Sacramento rivers and their borders present an ideal situation for rice culture. These lands, when leveed, have every facility for flooding and draining, and their fertility and durability excel the quality of the Texas lands. It is a mistake to treat rice as a tropical cereal only. It is the leading field crop of Japan and of parts of China that are by no means tropical. There is no reason why it should not flourish in California and even become eventually an article of export to Asia.

This is part right and part wrong. Of course, rice is not tropical, but it requires a certain amount of heat during the growing season. Careful experiments on the best sediment land near Stockton a few years ago demonstrated the fact that, while the rice plant grew well for two years in succession, in neither year did it seed well. It simply made plenty of leaves. The behavior of the plant, like that of true sugar cane grown near it and which did not show sugar content enough to be profitable, seemed to be due to the cool nights. No matter how hot the day, the nights were as a rule cool, and this checked some of the vegetative functions of the plant. It seems true that there are places in California suitable for rice growing, but it does not do to indulge in too sweeping generalizations, when it has been demonstrated that the Call and other a priori people are liable to be very much mistaken in their selection of ideal places.

We have frequently alluded to the organization of the cattle interests which has been progressing during the last few months in California as well as in the great interior range States. In this State the name of the organization is the Stock Raisers' Protective Association. It is intended to be one of the most powerful organizations ever attempted in the West. Tulare and Fresno counties are now thoroughly organized and five other counties are partly organized. It is the intention to continue the work until all the representative stockmen in the State are combined for their mutual protection. As now organized the officers of the association are Charles Adams of Visalia, president; D. T. Curtis of Reedley and Oakland, vice-president; R. E. Hyde of Visalia, treasurer; V. D. Knupp of Porterville, secretary. The executive committee consists of George L. Warlow and J. Weil of Sanders, Fresno county; William Blaine of Visalia and George Williams of Porterville, Tulare county; C. M. Shannon of Madera and William Crooks of Big Oak Flat, Madera county. The association has seventy-three charter members, including the wealthiest and most prominent stockmen in central California. A constitution and by-laws have been adopted, and the organization is effective and in good working order. Its purposes are the protection of the stockmen's interests in every branch of the business, but particular stress is laid on the enforcement of the quarantine laws, and the protection of herds from all contagious diseases and from the raids of the rustlers and thieves. Such an organization must work for the advancement of the live stock interests of the State, which is certainly a very desirable end.

We do not remember a year when canners showed so much appetite for fruit so early in the season as they are showing this year. From time to time we have had notes of their contracts made here and there, and it is now reported from Haywards that bidders from the various canneries have been busy bidding upon the different fruits. The prices offered are $25 per ton for apricots, $20 per ton for pears, 3 cents per pound for black cherries and 5 cents for Royal Annes. It is true that there is no sudden wealth for growers in these figures, but there is money in some of these prices in connection with full crops such as seem likely to be secured this year. However that may be, there is enough in the attitude of the canners to give assurance that they have reason to plan largely for the future, and that of itself is comforting to growers as early in the season as this.

Reports are that Mr. E. T. Earl has stepped out of the fruit business, with a million in his pocket, and will now allow a group of prominent capitalists who have bought his business a chance to make a million each in the future, if they can. Mr. Earl is to be thanked for not wanting the earth. The new directors are prominent bankers and butchers, who are seeking new lines to wealth. How long the growers will allow these enterprising people to take the millions while they take the mills remains to be seen, but there will certainly be no change until growers command more union and strength than they have yet displayed. It is said that the new men in the Earl Fruit Company have been associated with the prime movers in several colonization projects and large industrial affairs in the Sacramento valley. As successful bankers and butchers are generally pretty well fixed for land, it is fair to expect colony enterprises and increase of population to follow their undertakings. In this line there is great opportunity for good work.

QUERIES AND REPLIES.

How Much Water for Oranges?

To THE EDITOR:—This question has been put to us several times by growers of oranges in Porto Rico: How many gallons per day, week or month are required to irrigate an orange tree or acre of orange trees? Can you give us the information?—READERS, New York.

The amount of water required to grow the orange or any other kind of fruit depends upon local conditions of soil, rainfall, atmospheric humidity, manner of cultivation, etc. Even in California there is a wide range in the amounts actually used. In the third edition of "California Fruits and How to Grow Them" there is a table showing the amounts reported by thirty-two growers of oranges in different parts of the State, and the extremes are 3 acre inches (which are equal to 81,463 gallons) up to 60 acre inches, which are equal to 1,625,260 gallons per acre. The first is for a very retentive soil with a large rainfall; the second is for a very coarse, light soil and a very scant rainfall. Both these extremes are unfit to make any general deductions from. The average amount used for oranges in full bearing would not be far from 20 acre inches, or 543,088 gallons per acre per year. But this is for California, in addition to average rainfall of about 10 inches and under the conditions of an arid or semi-arid climate. It is presumably greater than could be required in Porto Rico, with a humid climate, and California experience would probably be of little account in Porto Rico.

A Mite on the Guavas.

To THE EDITOR:—I send a small box with guavas affected by some fungus disease. At first it only injures the appearance of the fruit, but soon renders all the fruit on the tree entirely worthless, cracking it open while green, after which it shrivels and dries on the tree. It threatens to ruin the entire orchard. —GROWER, Santa Barbara.

The distressing injury to your guavas is done not by a fungus, but by a mite—one of the red spider class—and has been determined by Prof. Nathan Banks of Washington as a species of tyroglyphus. The cracking and malformation of the fruit is due to the injury to the tissue while young. The remedy is the same as for other mites, viz., sulphuring during the hot season when all mites are most active. Possibly sulphuring may be difficult with so dense an evergreen growth as the guava. It would be more effective to give a summer fumigation with hydrocyanic gas, as is done for scale on citrus trees. This will be a dead shot, and, as the trees are small, should be done cheaply. Spraying such dense foliage would be too difficult probably to be satisfactory.

Why No Potash in the Spring.

To THE EDITOR:—Please tell me what objection there is, if any, to using potash fertilizers on land in the spring. I notice that some writers say they should be applied in the fall, but they do not give the reason.—M. H. B., Oakland.

The reason why potash salts should not be used too near the time of planting is because they contain chlorides which may be injurious to tender rootlets. Of course some potash salts contain more of these compounds than others—the sulphate, for instance, contains very little. If the application is made some time in advance of planting, the injurious matters are distributed or pass away in the drainage, leaving the potash behind. For this reason one can apply potash early without danger of losing it, as would be the case with other soluble fertilizing salts like nitrate of soda or superphosphate. They say "not in the spring" at the East because in a cold climate that is the universal planting time. In California we would simply say: not too near the planting time, whenever it may be.

Prevalence of Pea Weevils.

To THE EDITOR:—Our experience shows that Burpee's Profusion pea, growing beside Daisy Carter and Barstow's Sugar peas, are much more susceptible to the pea weevil. It was not noticeable until the seed peas were dried under exactly similar conditions.—GROWER, Shasta county.

We have not had such comparison made before, and it will be timely for other growers to tell what differences they have noticed in the attitude of the weevil toward the different varieties they grow. The appearance of the weevil after the peas are dried is the usual way of the weevil, though the egg is deposited in the pea while it is young. To check the work of the weevil, the seed should be subjected to carbon bisulphide vapor as soon as they are threshed out, and injury will not then proceed to the point of injuring the seed.

Is Willing to Push Prunes.

To THE EDITOR:—I have seen notes in your paper about ways of disposing of dried prunes, and the plan most favored seemed that of sending young women to the important cities of the East to serve prune dishes nicely prepared in the chief groceries. I should like to know more regarding the plan, and, if it is adopted, to be one of the young women sent East to advertise prunes.—NANCY, Colusa.

We had not noticed that California girls would be sent, but that Eastern girls would be taught to cook and ladle out the cookery. Of course, California girls would be better. They would, however, be too charming. We can not afford to lose them nor even to take the chance of it. A California girl is too irresistibly sweet at the East without prune sauce. With that our representatives would be snapped up so fast that all the prunes in the State would not pay the cost of keeping up the ranks. But the best way to find out just what is proposed with the Eastern prune projects is to write to the Secretary of the California Cured Fruit Association at San Jose.

Irrigation During Bloom.

To THE EDITOR:—I would like your opinion concerning irrigating almonds when they are in bloom. I have fifty acres, and have plenty of water for them, but do not know whether it is best to water them now or not.—GEORGE L. HASSON, Fernando.

Rain falls on blooming trees without disturbing the fruiting, unless the rains be heavy enough to prevent pollination by drenching, or so long as to keep the bees away for some time. On some of our lower fruit lands rivers overflow or backwater enters the orchard during the blooming time, and still the trees bear fruit. Irrigation of citrus fruit trees proceeds during the blooming, and yet the trees bear; we have seen the same result with deciduous trees. We do not believe that irrigation of any tree will disturb the tree during bloom, except, possibly, under unusual conditions. For instance, if the ground be very dry, the quick change to saturation by irrigation might cast the bloom. Again, irrigation with very cold water would be very likely to disturb the vegetative activity and drop either bloom or fruit, for cold water is not a good thing for an active plant. But, if the tree is in good condition, upon soil which was fairly moist when it started growth, we apprehend no evil from further addition of water at average temperatures. If others have observation leading to other conclusions, let them speak now or else forever keep silence.

Who First Grew Limas as a Field Crop?

To THE EDITOR:—I am thinking about writing for the PACIFIC RURAL PRESS about my success in raising the Kentucky Wonder pole bean without poles. I have not forgotten how people laughed at me when I planted quite a patch of Lima beans without poling them, near Santa Barbara, in the spring of 1869. When they saw my wonderful crop in the fall they were compelled to acknowledge it was a great success. By the way, I would like to hear from you through the columns of the PACIFIC RURAL PRESS if you know, or can ascertain, who first raised Lima beans in southern California for the general market. —IRA W. ADAMS, Calistoga.

This is an interesting question. We have never seen a statement of how the great Lima bean industry began in Santa Barbara and Ventura counties. We have several historical references to the matter, but no one seems to know a definite beginning. Mr. Adams places his first work without poles in 1869, and the laugh he endured indicates that he was very early. Can any reader give an earlier date or other facts about the beginning?

Red Spider.

To THE EDITOR:—Please inform me through the columns of the PACIFIC RURAL PRESS if the enclosed specimens are red spider or a fungus growth and the remedy for the same.—OLD SUBSCRIBER, Pt. Arena.

It is a case of red spider, and a bad one, too. The remedy is fine sulphur blown or thrown through the foliage as soon as the weather begins to warm up well, so you can get good sun heat to vaporize the sulphur.

Just as Bad Under Another Name.

To THE EDITOR:—I see that evergreen millet is advertised in your paper for hog feed. Now I am in the hog trade a little and I want to inquire about it. I have been caught on Bermuda grass and Johnson grass, and I do not want to be caught on a nuisance that cannot be suppressed. Does it sometimes go under another name? How does it grow, how does it look, what kind of ground does it require for full perfection and is it good for hogs? Will it grow on ground that overflows three or four times in the winter season?—READER, Sacramento.

Evergreen millet is Johnson grass. It is well thought of in a few places and condemned in many. It will stand almost anything but drouth. In the valleys it will not grow on dry land where you want it, and you cannot get it out of places where you do not want it. In waste land subject to overflow, and where the seeds or roots were not likely to get into cultivated land, it might be valuable, but it is a very dangerous plant.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 4, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warm weather has continued during the week and no rain has fallen except scattered light showers in the northern counties. Conditions have been very favorable for all growing crops. Northerly winds have dried out the soil to a considerable extent and farm work has been resumed. Rivers and mountain streams are gradually falling to nearly their normal stage, and it is believed there is no further danger from floods. The damage from water thus far has been trifling. Grain is in good condition and advancing rapidly, with prospects for a heavy crop. Green feed is abundant in all sections. Almonds, apricots and cherries are in bloom. Citrus orchards are being increased.

COAST AND BAY SECTIONS.

The unusually warm weather during the week has been very beneficial in drying out the soil on lowlands and advancing the growth of grain and grass. Plowing and seeding have progressed rapidly and considerable orchard work has been done. Grain is in excellent condition and gives promise of a heavy crop. Prospects are also good for an unusually large yield of hay. Pasturage is plentiful and cattle are in good condition. Orchards and vineyards have been greatly benefited by favorable conditions this season and will probably yield heavy crops. Deciduous trees are in full bloom.

SAN JOAQUIN VALLEY.

Generally clear, warm weather, with a few foggy mornings, has prevailed during the past week. These conditions have been favorable for the growth of grain and grass and the development of fruits. Much progress has been made in plowing orchards and vineyards, and the soil is reported in excellent condition except in the lower lands, where it still remains too wet to work. Grain is looking well and grass and alfalfa are making rapid growth. Vines are looking nicely. Fruit buds of all kinds are swelling. In some localities almonds have shed their blossoms and peaches and apricots are in bloom. Green feed is plentiful. Ditches are full of water.

SOUTHERN CALIFORNIA.

The weather has continued unusually warm during the week, and dry, hot winds have prevailed in some sections. Conditions have not been altogether favorable for crops, though no serious injury has been reported. The warm weather has advanced deciduous fruits and oranges have advanced rapidly. On the higher lands around Riverside citrus trees have started a new growth and buds are appearing. Rain would be beneficial, especially to grain and grass.

LOS ANGELES SUMMARY.—Warm week, with drying winds, has crusted top soil, making cultivation difficult in places. Rain is needed, though crops are not suffering.

EUREKA SUMMARY.—Weather conditions are favorable. Plowing and seeding progressing rapidly; a larger acreage of hay grain will be sown. A few apricot and peach trees are in bloom.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 6, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.28	38.73	41.40	31.89	40	76
Red Bluff	T	22.72	17.84	19.24	48	84
Sacramento	.00	16.10	14.57	14.87	50	72
San Francisco	.00	18.04	16.24	17.43	50	78
Fresno	.00	9.94	7.04	6.59	44	76
Independence	.00	5.66	2.17	4.40	40	74
San Luis Obispo	.00	27.04	14.70	14.29	40	90
Los Angeles	.00	13.61	5.56	13.25	46	88
San Diego	.00	8.53	3.13	7.52	52	82
Yuma	.00	3.60	.76	2.60	52	90

HORTICULTURE.

Suggestive Points on Orange Growing.

In his annual report as president of the Riverside Horticultural Society Mr. Koethen made these important suggestions:

THE BEST NAVEL TYPE.—Where do so many Australian Navel orange trees come from? They were planted for Washington Navels. Is it not largely accounted for by the acknowledged tendency of the Navel to "sport," or produce bud varieties? The samples of fruit before us were picked from the same tree: those resembling an Australian from one limb and the true type from another. It is apparent that a bud from the former would give us a deviation from the type. Will not some of our growers make an effort to fix the type of the best form of Washington Navel by selecting buds with greater care? The writer proposes to select the best tree in the best orchard that he knows of, selecting the tree with view to considering form and habit. From this tree he will select the best limb, considering form, productiveness and quality of fruit. The best shaped oranges, of best color and flavor, will then be selected, and the orange cut with a long stem, and the buds immediately above the fruit, put away and labeled for budding into suckers later on. The tree thus budded will then be carefully watched, and the same process of selection repeated until the third or fourth generation. We believe that with this care the tendency to sport can thus to largely eliminated, and buds from the later generations can be relied upon the produce trees that will produce typical fruit.

FROST PREVENTION.—Frost protection is still a live subject—in fact, a much livelier question than it was when last we met. It is safe to say that had $2000 been spent in this valley for the maintenance of coal basket fires on the night of January 1st, many thousands of dollars would have been saved in removing the suspicion that some Riverside fruit was frosted. As it was, but few were ready to do anything, and the few (with notable exceptions) made no effort, because the neighbors were not going to light up, and the few baskets on hand were insufficient on small tracts, without the aid of neighbors.

Before us is an orange that was in a grove where the temperature went to 22° at midnight on January 1. Fires were started and a temperature of 26 was maintained for the balance of the night. The fruit beside it came from an orchard similarly located. A clear case of before and after taking.

Again, in another locality, a gentleman who had heard of the work of our club, purchased coal baskets from Mr. Copley, and he vouches for the statment that his whole crop was saved, while those of his neighbors were badly damaged, and has ordered enough baskets for another large tract, showing his faith in the coal basket. We hope that our frost protection committee will make an energetic campaign, which will result in convincing the greatest possible number of orange growers that protection is possible and cheap; that in union there is strength; that no matter how mild the fall is, the fatal night may come when least expected, and that we need better forecast service.

A. C. Pickett told of his experience. It has cost $8 for fires in coal baskets on five acres on New Year's night, and the result decided that the money was well spent—was worth in fact, many times the amount expended.

The Santa Rosa Soft Shell.

At the Santa Rosa Farmers' Institute, in the course of an address upon the local suitability o walnut growing, Mr. Luther Burbank said: "Many walnut planters, in this region, were greatly delighted a few years ago to see their trees, only four or five years old, bearing heavy crops of superb, large, thin shelled walnuts. They supposed that they had the only tree of a wonderful new variety, but by comparing notes they were all traced back to one lot of nuts from a superior tree planted in my nursery in 1885. By general consent it was called the Santa Rosa soft shell. This nut is of rather large size, with a light colored shell of thickness just right for shipping without danger of crushing.

"It always produces a full meat with a thin, white skin, and is wholly free from the disagreeable bitterness found in nearly all other walnuts. In fact, it is so much superior to any of those usually sold in our markets that all who have tasted it declare it to be by far the best of all known walnuts. The trees nearly always commence bearing as early or earlier than a prune tree, and are heavy, continuous bearers. Often a young tree, two or three years old, may be seen bearing a few nuts while yet in the nursery row.

"Beware where you buy Santa Rosa soft shell trees. Buy only of some nurseryman well known to be reliable; otherwise you will not live long enough to outgrow your repentance for your lack of caution."

THE VINEYARD.

Other Resistant Stocks.

TO THE EDITOR:—Why I am not an advocate of Riparias and Rupestris for reconstructing old (as also for the planting of new) vineyards is because I find them unsatisfactory. I have experimented with these stocks for several years and my enthusiasm for them departed long ago. I feared the coming of phylloxera and prepared for it long before I saw it.

About eighteen years ago I bought one pound of seed of the wild California species, from which I have grown thousands of young plants more than I made use of. Some of these stocks planted in the vineyard and grafted are alive yet; but, generally speaking, they are poor graft stocks. I also tried Riparia seedlings (grown by an enterprising nurseryman of Santa Clara county) in the planting of a big part of my vineyard. These were allowed to grow three years before grafting, and they have borne now eleven crops of grapes. My experience with them is: The Riparia is a useful stock when planted in cool, loose soils, retentive of moisture, such as can be found quite often on northern slopes from the lower foothills up to the summit of the Santa Cruz mountains, while in drier soils and warmer locations Riparia is a failure. During the last two seasons many of these old Riparias (now fifteen years old and planted in fairly good soil) succumbed to the drouth.

RUPESTRIS.—Of the Rupestris (nearly as old as the Riparia) I have not extensive plantings, simply because I found them so very hard to graft, and on those stocks on which I had the satisfaction of seeing a graft growing I could not see any well-grown, fully developed clusters of grapes during all these many years. Ask me what I think of Rupestris for stocks, and I unhesitatingly reply, "They are a nuisance." Had they all been thrown into the Mississippi river it would have prevented disappointment to many a grower. The Rupestris are in their pure state the embodiment of a wild, untractable plant, good for nothing more than to hybridize with other species, especially such as do not grow readily from cuttings. In this way the Rupestris imparts its characteristic of easy propagation to the resulting progeny, and they give to a non-resisting vinifera some degree of resistance to phylloxera. It is plain that their wild nature must be subdued by the refined blood of the vinifera or other species susceptible to vineyard culture, and only then will they serve a useful purpose.

VINIFERA HYBRIDS.—Growers enthusiastic over the vigorous growth of Rupestris when ungrafted should try them in the hybridized state, such as we have in Alicant-Rupestris, Aramon-Rupestris, Mordvedre-Rupestris, hybrid Seibel, or, if with them home-made goods are on a par with imported ones, by all means try the America, which is a hybrid of Post Oak-Rupestris, or the Rulrup, a hybrid of Rulander-Rupestris, or, still another, the Pukwana, hybrid of Monticola-Rupestris, and they will never regret it.

In the study and observation of the Rupestris, as well as Riparia, I have become impressed with the fact that for our greatly varying conditions of soil and climate these stocks are too much of a one-sided nature. They are suited to one locality out of fifty, probably, and can never become what growers so much need, namely, an all around perfect graft stock, such a one as they can plant as a cutting direct in the vineyard (without cutting out any buds) and graft them at any age successfully whenever they are ready. WM. PFEFFER.

Cupertino, Cal., Feb. 24, 1901.

Late Pruning of Grape Vines.

TO THE EDITOR: — The "Experienced Grape Grower," in the Tulare Register, recommends a course which, I think, is apt to mislead many who follow it. In the first place, I do not know of any very extensive bleeding of vines soon after pruning in December and January, when the sap is still dormant. The wounds will soon dry up and no considerable loss of vigor caused. On the contrary, late pruning, when the sap is in rapid motion, will cause a greater loss of vigor, and the wounds will not heal so rapidly, but keep on bleeding for some time. As to protection against late frost, by pruning in April, this was tried in Sonoma county, eighteen years ago, in a vineyard on a low location. The result: Heavy bleeding of the vines, a slow start from the lower buds and late ripening of grapes, causing deficiency in sugar and color, so that the wine was light and unsalable; these were Zinfandel mostly.

I have advocated and followed a medium course, which produced the desired results. Instead of the very short pruning generally applied to all varieties pruned to stools or bushes, of two buds to a spur, I pruned in midwinter to spurs of three or four buds, when it could be done leisurely and well. Of course, the upper buds on each spur started first; if a late frost damaged them, there were the lower buds to fall back upon, with but a slight check in development. If no frost occurred, the superfluous shoots were easily thinned out at the first summer pruning, or suckering, as it is generally called here. All the work, if done at the right time, is much easier and will be performed better. Let our friends in Tulare try this and see how they like it.

Napa. GEORGE HUSMANN.

FRUIT PRESERVATION.

Pickling Green Olives.

TO THE EDITOR.—The favorite olives with the average consumer, and those for which the trade will give the highest price, are the large "Queen" olives which are imported from Spain. They are olives of very large varieties, pickled when green by processes which are trade secrets of the Spanish producers. The finest and largest are made from the variety called Sevillano, though other large kinds are used, and doubtless any large olive, such as Macrocarpa, Picholine, Santa Cantarina and Ascolano, could be successfully marketed if cured in the same way. Now that these varieties are beginning to be produced in California in notable quantities, it is important that some way of curing them should be found that will enable them to hold their own against their imported rivals. Some experiments have been made with this end in view by the Agricultural Experiment Station at Berkeley which indicate that the problem is not very difficult.

The principal difficulty encountered by those who have attempted to produce green pickles in California has been to find a method of preserving the natural green color of the fresh fruit. If the processes used for pickling the ripe fruit are used for the green fruit the flavor is good, but either during the process or soon after the green pickles change color, becoming more or less dark gray or brownish. This lowers their selling price considerably and makes them unacceptable to the trade.

A SUCCESSFUL PROCESS.—The following process has been tested on several varieties of olives and has been perfectly satisfactory in preserving their green color for over a year when in the brine, and even when taken out of it and kept in a loosely corked preserving jar the darkening of the color has been barely perceptible at the end of a month.

No two varieties should be pickled together and the olives should be graded into three or four sizes. Then a preliminary trial should be made to determine the proper amount of lye to use for each particular lot. Take a series—about six—of pint preserving jars and fill them with the olives to be tested. Pour into them, respectively, a ½%, 1%, 1½%, 2%, 2½% and 3% lye solution, sufficient to completely cover the olives. At the end of forty-eight hours examine them. Some of the weaker lye solutions will be found to have been neutralized. This will be evident from the lack of the slimy feeling which the fingers have when dipped into a lye solution and rubbed together. Suppose that the ½%, 1% and 1½% solutions are neutralized, and that the 2% solution still has a slight slimy feeling. This shows that a 2% lye solution is a little stronger than is necessary to neutralize all the bitter or acrid matter in the sample tested. If, now, we use a 2% solution in curing the bulk of the olives from which the sample was taken, we will be able to preserve the green color perfectly. If we use a somewhat stronger solution, say 2½%, the color will bleach out a little, while if we use a still weaker solution the green will become of that disagreeable grayish or brownish tint which we wish to avoid.

PROCESSING.—The olives are now placed in convenient receptacles where they can be treated with the minimum exposure to light and air. For this purpose fifty-gallon barrels with very large bunghole (4 or 5 inches in diameter) and spigot are useful. After filling the barrels with the olives, the lye of the strength determined by the preliminary test is poured in. Each barrel should be quite full of olives and sufficient lye should be put in to come up flush with the bunghole. At the end of forty-eight hours the lye should be drawn off, the olives quickly washed with two changes of fresh water and the barrels filled with a 2% solution of salt. This brine should be replaced successively with a 4%, 8% and finally a 12% solution, in which the olives remain permanently. The successive brines should be allowed to act for from two to three days, according to the size of the olives, and the whole process will thus take from ten to fourteen days.

OUT OF THE AIR.—The essential part of the process is to avoid exposing the olives to the air until all the bitterness and acid is completely neutralized. After this the green color seems to be fixed and exposure to the air does not change it much, though it is well all through the process to avoid leaving the olives uncovered by liquid any longer than necessary.

As different varieties of olives differ very much in the amount of lye necessary to neutralize them, the importance of treating each variety separately is evident. Very bitter olives, such as Mission, Sevillano, Manzanillo and Picholine, require solutions containing from 1½% to 2½% of pure potash lye, while olives containing little bitterness, such as Ascolano, require only from ½% to 1% solutions. As many of the commercial potash lyes are far from pure, some containing not more than 50% of potash, the number of preliminary tests must usually be at least six, as indicated above. FREDERIC T. BIOLETTI.

Berkeley, Ag. Ex. Station, Feb. 26, 1901.

Agricultural Review.

BUTTE.

HEMP GRAIN BAGS.—Gridley Herald: Some time ago we mentioned the fact that much complaint was heard concerning the poor quality of grain bags now on the market, and urged that some steps be taken to get the Legislature to pass an act allowing the prison directors to try hemp instead of the imported jute. Hemp, as is well known, grows nicely in Butte county, and if grain bags could be made from it a large acreage would be planted, and in time to come we doubt if there would need to be any jute imported.

FRESNO.

A WHEAT KING SAYS GRAIN GROWING IS PROFITABLE.—Fresno Republican: "Yes, farming on a large scale pays." The speaker was Clovis M. Cole, the wheat king of the San Joaquin valley. Mr. Cole has been wont to put in every year 30,000 acres in wheat—25,000 winter-sown and 5000 summer-fallow. This year, however, he is farming 10,000 acres only. It was reported that Mr. Cole had come to the conclusion that grain farming so extensively in Fresno and Madera counties was not a paying proposition and that hereafter he would not undertake to cultivate more than 10,000 acres. It was to a question to that effect that Mr. Cole responded that wheat farming on a large scale was a profitable business. "You see," he went on, "I look at it this way: Now say you make 50 cents an acre—the profit is not large—then on 160 acres you clear $80. Now it takes a season to grow a crop on eighty acres, just as it does to produce a harvest on 30,000 acres. When you have 30,000 acres in you clear up $15,000." In explaining that he was undertaking wheat growing on a smaller scale—although still big, as compared with wheat farming generally—Mr. Cole stated that the two previous dry seasons and the fact that he had "got in with the wrong people" clipped his wings, and this year he is content with putting in 10,000 acres. In a year or two, he declared, he would get back to his former scale of wheat growing—30,000 acres.

KERN.

BRIGHT CROP PROSPECTS.—Kern County Echo, Feb. 28: Crop prospects throughout northern Kern are very bright, and with an occasional shower during March and April there will be a big crop to harvest. This is especially true of the Delano country. The recent rains have thoroughly moistened up the plains and the wheat fields are in a very promising condition. The acreage seeded to grain in that locality this year is large and signs are very favorable for a prosperous year.

KINGS.

WILD PIGEONS NEVER SO PLENTIFUL BEFORE.—Hanford Journal, Feb. 26: The wild pigeons which came down in the valley from the Sierras on account of the snow lying so low down have, such of them as escaped the guns of the hunters, returned to the hills. This is the first time in the history of the country that these birds got as far west as Cross Creek, in this county, where hunters secured some fine messes. The birds were fat and excellent eating. They were so thick in places on the plains east of Visalia that they devoured the grain seeded on many sections of land and thousands were poisoned by the farmers.

LOS ANGELES.

SILK CULTURE.—Los Angeles Express: Few residents of the city are aware that there has gradually grown up here a profitable silk culture industry, yet this is a fact, and the industry boasts a club of about twenty-five members.

FIRST RIPE CHERRIES.—Los Angeles Express, Feb. 26: The first ripe cherries of the season are on exhibition at the Chamber of Commerce. They were raised by E. T. Byram of Glendale, and are perfectly formed and luscious to look upon. Mr. Byram states that, although the cherries promise to be unusually large and fine this season and a very good crop, there are so very many birds to feast upon them that it is not probable that a large quantity will reach the market.

ORANGE.

FINE CELERY LAND. — Santa Ana Blade: Ten years ago the portion of Orange county now famous as the greatest celery producing section in the world was a swampy waste, overgrown with tules and willows, a favorite resort of wild fowl, and in its drier portions a feeding ground for wild hogs, hundreds of which roamed over its morasses and fattened upon the lush vegetation there found. To the presence of these wild hogs in this neighborhood, and their ability to keep in such good condition the year round, is due the discovery of the fact that the peat lands were particularly adapted to celery growing. Investigation as to the food of these animals developed the fact that wild celery grew in abundance in the neighborhood and was greedily devoured by the bristly denizens of the morass as the choicest titbit furnished by nature.

SACRAMENTO.

EXPERIMENTING WITH TOBACCO.—Sacramento Record-Union: Geo. Spiker, the experienced tobacco grower, has some fine-looking samples of tobacco grown near the American river, between here and Folsom. Mr. Spiker expects to lease some land just southeast of the city and raise a crop this year. He has received a fine assortment of seed, and says the land about Sacramento is splendidly adapted to the growing of tobacco, but it is in the curing of the weed that lies the secret of success.

SAN BERNARDINO.

BIG CANTALOUPE FARM.—Redlands Citrograph: At and near Indio, which is 60 miles southeast of this city on the Colorado desert, 200 acres are now being planted to Rocky Ford cantaloupes. A trial was made last year which proved that not only very fine, but very early, cantaloupes can be raised there, there being plenty of ripe melons by June 15th. Water for irrigation is furnished by artesian wells.

BIG AND DESTRUCTIVE EAGLES. — Chino Champion: John W. Turner recently shot a pair of eagles southeast of town which were handsome specimens of the American bird of freedom. He brought them down with two shots in succession as they were rising. One of them measured 7 feet 9 inches from tip to tip of the wings; 8¾ inches across his powerful talons from point to point when outspread, one of the claws measuring 3¼ inches in length. Such a bird would easily be the master of a sheep or calf, and several of them together have been seen to kill a colt in the Chino hills. These birds are seen hereabouts quite frequently.

SAN DIEGO.

FINE ORANGE CROP. — San Diego Union, Feb. 28: San Diego county is showing up very well this year in its orange crop. It never has laid claim to being much of an orange center, but the way the fruit is going out now easily disproves this belief. Shippers report another scarcity of cars. Some time ago very few cars were obtainable, but this condition was remedied only to be repeated again. The heavy shipments from all over southern California have severely taxed the facilities of the railroad. The prices being obtained in the East for fancy stock are from $2.75 to $2.85 per box. The shippers say that a drop was expected some time ago, but, much to their satisfaction, it did not take place. It is liable to come any day, however. The growers and shippers are making hay while the sun shines, and are getting as much fruit as possible out of the way while the good prices last. It is estimated that about half of the crop has been picked. So far this month the San Diego County Fruit Exchange has sent out seventeen carloads of oranges, and is preparing to send out more in the next few days. Besides the exchange, there are many shipping firms which have also been sending out oranges at a satisfactory rate. The San Diego Land & Town Co., which has many acres planted to the golden fruit, has shipped out many cars of oranges the past month.

MUCH HONEY EXPECTED.—San Diego Union: A San Diegan who recently returned from a visit to his bee ranch, which is in the Escondido section, reports that the prospects for a large honey crop are most encouraging for this time of the season. It will need only a few later rains to make the prospects realities. Already the bees are beginning to make honey, but it is mostly for their own consumption. The season for taking off honey will begin in May and will continue through the summer, or as long as the bee feed lasts. The plants from which the bees are now obtaining honey are the manzanita and the greasewood. The recent rains soaked deep into the ground and have given the trees, sage and other hodey-bearing bushes of all kinds a good start. The hills are green with vegetation and many varieties of wild flowers are blooming. This same condition is to be found in all sections of the county, and not in only one part. The bushes that will bloom at the height of the honey-producing season could not have had the rain at a better time. For this season of the year the prospects have not been brighter for a number of years past, and apiarists are consequently very hopeful and happy.

SANTA CLARA.

LIGHT DEMAND FOR PRUNE TREES.—San Jose Mercury, Feb. 25: A local nurseryman says: "Nurserymen generally anticipated a large demand for prune trees this year. The organization of the Cured Fruit Association led us to believe that the public generally would be so well satisfied with the outlook for this fruit that many trees would be put out. Unfortunately the market for the fruit has been poor, so that there is a decided disposition not to put out the trees. Of course there have been a good many trees sold, but these were chiefly to fill in places in the orchards where trees have been killed by something or died as a result of the dry years. I know of but two new orchards set out. Early in the season prices were considerably higher than more recently when prunes have been selling at 15 cents for good trees and 10 cents for those of smaller size and less desirable. Apricots have been in great demand, greater than for several years. We have not been able to supply the calls on us and I am sure we could have sold 50,000 more trees if we had them. The varieties most in demand are the Blenheims, Hemskirks and Moorparks. Prices range all the way from 15 to 30 cents, selling for about an average of 25 cents. Next to apricots, peaches have been in demand. The Muir, Phillips Cling and the Henrietta Cling are the favorites. The price is about 20 cents all around, some a little less and some a little more. Pears are in good demand, the Bartlett being about the only thing wanted. Many cherries have been put out, the Royal Ann, and the Bing, a black cherry, being most sought after. They go at 15 cents. Apples have been in fair demand, though cheap, selling for 10 to 12 cents. A great deal of rhubarb has been put out, the plants selling at $30 a thousand."

DEATH FOR RED SPIDER.—San Jose Mercury, Feb. 27: County Entomologist Ehrhorn has recently received from Alexander Craw, quarantine officer State Board of Horticulture, a consignment of insects intended to rid the Santa Clara valley orchards and gardens of many injurious pests. These insects, which are natives of Australia, consist of ladybugs that feed on the red spider, a moth which feeds on the black scale, and also a large consignment of ladybugs that destroys different plant lice. In speaking of the insects and the benefits that are to be derived from their introduction, Mr. Ehrhorn said: "Included in the consignment that I have recently received is a colony of ladybugs that prey upon the red spider, well known to all orchardists of this valley as a very destructive parasite. It is claimed that this ladybird will, as soon as properly introduced, destroy these red spiders. The most important insect that I have received is a moth which feeds on the black scale. Several attempts to establish this insect in the southern part of the State have failed. Mr. Craw, however, desired that we try to introduce them into this county. I have turned a small colony of them loose in various olive orchards infested with the black scale. The larvæ of the moth does the work. It feeds on the scale and carries the empty shells on its back."

SHASTA.

BLACKLEG AMONG CATTLE.—Redding Searchlight: The dreaded "blackleg," a disease peculiar to cattle, is reported to have broken out on the big winter ranges in the Bald Hills country. M. P. Hildreth has recently lost a number of cattle through this disease. The carcasses of the cattle belonging to Mr. Hildreth, which have died from the complaint, have been cremated in hopes of staying the progress of the disease, which is singularly fatal. The spread of the disease would be a great disaster to the stockmen of Shasta county, as cattle are very scarce and correspondingly valuable.

SOLANO.

APRICOT TREES BUDDING POORLY.—Vacaville Reporter: The apricot trees in the hills and valley are showing the same peculiarity of lack of bud development as it was two years ago, when such a proportion of buds, after taking first growth, dried up and fell off the trees. As yet the danger is not very great, and will probably be confined mostly to old trees that have borne heavily in the past and those growing upon thin or poor soil.

WILL RAISE FINE STOCK.—Solano Republican, March 1. C. E. Barnhart, the Suisun stock man, is arranging to engage in the raising of fine blooded cattle. Last week Mr. Barnhart received eighty-five head of cattle from Sonoma county, and, as a result of a recent trip to San Jose, he has secured five thoroughbred Durham bulls from the Younger ranch near that place. On Wednesday Mr. Barnhart started for John Day valley, Or., where he expects to purchase a carload of registered Durham bulls.

SONOMA.

THE BLACKBERRY SITUATION DISCUSSED.—Sebastopol Times, Feb. 27: A bevy of blackberry growers and buyers met on Main street this morning and engaged in a good-natured but animated discussion of crops, reasonable and unreasonable prices, long and short term contracts, etc. James Moran, the local representative of the California Fruit Canners' Association, and T. E. Barlow, who is buying berries for shipment, participated in the joint debate, and a number of people listened with attention. It seems that Mr. Barlow is offering prices that slightly exceed the figures of the Canners' Association, but Mr. Moran contends that the specifications of Barlow's contract are not entirely in favor of the growers, it being especially stipulated therein that the berries must be in prime shipping condition at the time of delivery, which means loss of weight to the growers. The Association, Mr. Moran says, will receive all berries that are fit for canning purposes. Mr. Barlow countered and checkmated this contention by a series of arguments. Judging from present indications, it seems that there will be lively bidding for blackberries during the coming season. The demand is greater now than it has been for many years, and a number of growers say they will not sign any contracts until the market reaches its zenith.

SUTTER.

FRUIT TREES BLOOMING.—Sutter County Farmer, March 1: The almond orchards are now in full bloom and peaches and other varieties of fruit are budding out very fast. From the present outlook there will be a good crop, as the conditions are favorable for the fruit setting full and but little frost is anticipated.

TEHAMA.

HIGH PRICE OF SHEEP.—Red Bluff Sentinel: The lambing season is at hand, and Major E. H. Ward informs us that there are 300 to 400 lambs every twenty-four hours in his band and hardly any have been lost thus far. He will have about 7000 ewes to lamb and has sixteen men employed with his sheep. He tells them that every lamb saved is worth $2.50, as he has been offered that price, for lambs now dropping, on Sept. 1st. He has also been offered $4 per head for wethers without their wool. Even sheep pelts are now worth $1 each. Mr. Ward has also had an offer of $3.50 for ewes delivered next August.

TULARE.

LAKE LANDS ARE ALL RIGHT.—Hanford Journal, Feb. 26: H. C. Tandy has been looking after his grain crops in the Tulare lake section. He says the country down there never looked more prosperous. For miles the soil is green with grain and more is being put in every day. He says there is no danger at all, at present, from overflow, and he does not think there will be any danger inside the reclamation districts. The people who own the land and have crops in down in the lake are reported as not being afraid of overflow.

RAPID INCREASE IN HOG WEIGHT.—Tulare Advance: J. Frazier of Woodville brought into town two hogs on Monday that he has been fattening just one month. One month ago the hogs weighed 166 and 146 pounds, respectively, and when weighed Monday, after being hauled in from the ranch, it was found that each hog had gained 2½ pounds a day for thirty days; 2½ pounds a day is a good weight to put on a small hog.

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A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 10th day of April, 1901.

I. C. STEELE, President.

CHARLES WOOD, Secretary.

THE DAIRY.

Getting Good Stock.

To the Editor:—I read with much interest the article of Dr. Hester in the Pacific Rural Press of the 9th ult. on "Encouraging Introduction of Fine Stock."

There is a desire among most dairymen of this valley to improve their dairy stock. But how are they to do it? Thoroughbreds are not to be had at a price within their reach, and too often when they do invest in them they are imposed upon. Within the past two years a breeder or dealer in thoroughbred Holstein and Jersey cattle came to Hanford, and I am informed by many of his victims that he canvassed the country and succeeded in disposing of nearly two carloads of his stock at fabulous prices. Many of them proved to be grades and other stock which he had bought at near-by towns, shipped out of the country, only to be shipped back a few months later to fill orders for thoroughbred animals. Why this fraud has not been written up and the people warned against him I do not understand.

The San Joaquin Ice Co. of Fresno did a good work in shipping to this valley hundreds of well-bred dairy calves from Oregon. These were sold to dairymen who wanted to increase and build up their dairy herds. Some mistakes were made in selection and shipping by steamer. Many caught cold from the drenching they received and exposure to cold winds and died. We have many fine specimens of them left and hope the good work will be continued. This same company also advertised that they would send an expert East to purchase dairy bulls by the carload and thus deliver to the dairy owners at a much lower price than otherwise could be obtained. This, we regret to say, was not carried out, although it was the plan we approve.

The selection and purchase of fine stock must be done by competent, responsible and honorable persons, whom the people can depend upon—one whose judgment is superior to the average breeder. Not every person who owns cows is a good judge of dairy form. One thing we lack is education on these lines. More dairy and live stock journals are wanted among the stock and dairymen.

I can offer no better plan for the introduction of fine stock than that suggested by Dr. Hester, and hope some steps will be taken to give us good stock at reasonable prices.

L. P. Denney.

Angiola, Kings county.

Spurry.

To the Editor:—Spergula arvensis, commonly known as spurry in parts of Europe, is spreading graudually inland from the coast in Monterey county. Ten years ago I noticed it on sandy soil between Moss Landing and Camp Goodall; four years later it was not rare on the hill slopes near the Government reservation at Monterey; during the past year it was quite plentiful on these slopes, and on heavy as well as light soils; it now appears quite commonly in the northern part of the county, to the east of Watsonville.

In this county spurry is apparently an introduced weed (plant), and will hardly be noticed in pasture fields, where it may be quite plentiful, as stock are fond of it and crop it closely.

The plant grows rapidly from the first rains, coming into blossom in three or four weeks, reaching a height of 10 to 18 inches, and on light lands produces quite a considerable quantity of feed.

Eastern seedsmen, who have advertised the plant for years, state that it is a valuable soiling as well as pasture plant. Even in our driest season its extremely rapid growth enables it to mature seed within a month or five weeks after planting; so, unless very closely cropped, it reseeds itself very well, and in many cases may be used as a permanent forage plant with advantage. It will grow through the entire year where conditions favor it.

J. B. Hickman.

We would like to have Mr. Hickman's postoffice address. We know him of old, but he fails to give present location.

The Dairy Cow.

The following is part of a good paper read before the Riverside Farmers' Club Institute by Mrs. M. Eshelman Sherman, of Fresno:

"This cow may be of any of the dairy breeds or of no particular breed, simply a native cow, but she is never an accidental production. Some one has selected her ancestors and given them careful training in milk production. So that scrub though she may be, she has had selection and fitting for her work, whether developed scientifically or simply from necessity. When a dairy cow owes her superiority to the skill of the breeder she is usually a fine animal of registered strain, and so possesses the additional merit of being ready to transmit to her progeny the improvements the skill of the man has been able to develop in her by mating or breeding out of defects, and by constantly calling on her to do her best by feeding a carefully balanced ration. When a scrub cow that is markedly superior to her class is found, she is usually an animal raised under the best of environments, often that of the small colony lot farmer, whose wife and children milk and pet her until she is almost human in her affections. This is the best of training for milk flow, while the necessity for milk for the children makes the milking period run from calf to calf.

"If you are using a grade herd it pays well to take the calves from these cows, giving them the service of a good bull and five dollars for the calves when a month old. Yet, in any of these miscellaneous bred cows there is the chance of the pure blood of the sire not nicking kindly on the colder or less nervous strains in the cow. For as breeders, we must all recognize that milk producing cows are of a higher mental, or perhaps it would be better to say, of more nervous type than beef cows.

"One of the dairy commands most often broken is that of mixing up the breed. It is better to breed scrubs continuously, for the loss is no greater in the end. This mixing of the breeds seems to be a fad with a large number of people who seem to think they can fool nature, and that they have discovered a cross cut to excellence—one so obvious that any one could have discovered it—if it had really existed. Cattlemen are not alone in this fallacy. One of our neighbors, some years ago, purchased a fine hackney horse to head a herd of mountain mustang mares. Now, as above all things else, a carriage horse must possess style and a goood disposition; the result was not even good enough for a delivery wagon, much less the Horse Show winners looked for by the sanguine owner.

"It is common for us, as breeders of fine cattle, to receive letters along this line of thought, saying: 'We are using a Jersey, or Durham sire, and now to further improve our stock, we wish to use a Holstein.' We always reply 'Don't do it. Stay with your breed, or you will have a lot of sorry mongrels, with all the faults accented and most of the virtues lost.' This is equally true if the Jersey follows the Holstein or the Durham is bred on the high grades of either. We must remember that our great breeds of cattle are all the result of man's work, and they have each originated in different environments; so to cross a race of cows habituated to the heavy grasses of lowlands with a race that originated on the scant grasses of the hills, is at least foolish. In the artificial acquirements of constantly producing milk, the cow has become fixed in her food habit, so that the surroundings as to ease and abundance of the supply, or the reverse, has resulted in the breeds being as widely apart in necessary environment for best results, as they are in color or size."

Cream Separators.

The dairy or farm users of cream separators may well profit by the experience and follow the example of the creamery or factory users of such machines on a large scale.

The differences between a superior and an inferior separator are just as relatively material to the farm user as to the factory user. The amount is not a couple of thousand dollars a year, of course, as it is with the factory user, but it is from $25 to $75 (according to the quantity of milk), and that means just as much to the farm user. Moreover a De Laval machine is twice as well made and will last at least twice as long.

Every large and experienced creamery or factory concern in the country is now using De Laval machines and buying them exclusively. Nearly all these concerns have tried various "cheaper" makes of separators and many have cast aside thousands of dollars' worth of them.

Such facts mean something to every user or intending buyer of a separator—big or little. The differences between small separators are just the same as between big ones.

The De Laval machines can alone employ the patent protected "Alpha" disc system of divided strata separation. They bring standard prices and are made accordingly. In consequence they are as superior to the best of other separators as such machines are to setting systems. The poorer makes of other separators are mere fakes.

A "20th Century" De Laval Catalogue will help to make these facts plain and may be had for the asking.

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THE VETERINARIAN.

Answers by Dr. Creely.

TOO INDEFINITE.

To the Editor: — Can you tell me through your paper what is the matter with my hogs? They are in good condition—in fact, I have just started to fatten. They seem to get stupid, eat very little at first, then they refuse to eat at all, and in about two weeks they die. I feed them a little skim milk, grain and pumpkins.—Reader, Eden Vale.

It is some sickness, of course, but no symptoms are described.

SWEENEY.

To the Editor:—Can Dr. Creely prescribe a cure for sweeney of a mule? The ailment is about one month old.—Reader, Ontario.

A seton is considered the best treatment. Some veterinarians prefer a rowel of leather hair or a silver coin. While this method of treatment is very old and crude, it is successful nevertheless. A liniment or liquid blister of the following is also good:

Turpentine, 8 ounces; oil cantharidis, 1 ounce; croton oil, 10 drops; oil spike, 2 ounces; mix. Apply once daily, but cease applying when it gets too sore.

INJURY TO COW'S FOOT.

To the Editor:—Over two months ago, while running, my cow stepped into a posthole—hind foot—severely spraining the leg at ankle joint. For first week it was bathed twice a day with Ward's liniment. About a month ago, at the ankle joint, directly in front of the dew claws, a ring of watery substance formed, which I lanced, letting out water. Now I notice that another ring is forming, but substance appears thicker. Shall I lance it again? Have not been doing anything for the sprain for some time, knowing that it takes a long time for a sprain to heal and trusting to nature. She is very lame yet. Is there any danger of ringbone?—A. W. Cutts, Live Oak.

An examination of the foot will reveal a puncture from some foreign body. Poultice with bran and flaxseed, alternately, in which has been placed a

tablespoonful of lysol; but have the wound in bottom of foot thoroughly opened.

FOR A MARE.

TO THE EDITOR:—I have a large, fine mare who is troubled with a constant heaving when she breathes. She also has a lump in her throat about the size of a hen's egg. About a year ago she had a bad dose of distemper and since then has breathed heavily. Is it contagious and can it be cured?—L. N. CORNETT, Natividad.

Give ½ ounce daily Fowler's solution arsenic, and feed wet feed only. Report progress in four weeks.

AN UDDER SORE.

TO THE EDITOR:—I would be pleased to have the opinion of Dr. Creely about a sore on a cow's udder, from which I send scab for examination. The location of trouble is on the udder underneath between the teats, but is spreading outwardly. It is about ten days since discovered; then it looked as though the skin had been severely scraped. We thought it a bruise. Closer examination revealed its nature. We applied solution of alum, also dilute carbolic acid, then sulphur and lard. When first seen it was about the size of the top of a teacup, now it is almost as large as a small hand. In the center about the size of a silver half dollar the skin seems to be eaten away as if cankered, a little water exuding. The cow is just fresh. Two months ago when drying off she gave stringy milk, when I began giving doses of saltpeter of about one tablespoonful dissolved in the feed in doses two to three days apart. I have used about three-fourths of a pound. Are such amounts excessive or sufficient? Does she need both local and constitutional treatment?—THOS. S. SHERMAN, Selma.

Give first a good physic of one-half pound glauber, one-half pound epsom salts dissolved in warm water. Give this in one dose. Apply sulpho-iodide ointment, which is made by all druggists, two times daily after washing with warm carbolic water. A heaping tablespoon daily of saltpeter is not too much if it is not continued over two weeks. DR. E. J. CREELY.
510 Golden Gate avenue, S. F.

CORRESPONDENCE.

Shasta County Notes.

TO THE EDITOR:—Last autumn I wrote to you, stating I had put in two acres of alfalfa and that it was then—Nov. 16th, or about that time—doing very well. I now write to you and say that I am more than pleased with my venture. Most of it is quite 1½ inches high, and I should say that it averages 1 inch all through. We have had the hardest winter in this section known to old inhabitants for seventeen years, and my own experience of seven years says the same.

I set another acre on first bench land and it has come out all right, but smaller in leaf than the other. I think that all danger of frost that could possibly hurt alfalfa is over.

We have had the highest river in my time. It came up to within 3 inches of flooding my place. Thirty-seven and a half inches of rain up to date sounds fine and all looks well for Shasta county.

I notice some of my neighbors cutting down almonds and grafting.

Your articles on chicken feeding, etc., are very interesting, and as I feed something like what was stated we are doing well, having about ninety-seven chickens in the flock. White Leghorns are our fancy.

Everyone, barring myself, is oil mad. Two wells are now being sunk and they are sure to find the stuff. I only hope that it won't pass your humble servant. Altogether, this section is looking well.

I hear rumors of hog disease and a whisper of "black quarter," which seems to take off the aged cattle. I doubt their diagnosis.

My almonds are out in bloom and in danger. The peach blossoms are nearly burst. I fancy the Muir is my best peach this year. Tragedy prunes are very heavy in blossom, and pears and French prunes also. I hear complaints of Tragedy being shy bearers, but I have not experienced any setbacks from them yet. But, then, I mixed my orchard—two rows of pears, two of peaches, two of Tragedys and two of French prunes, and also keep bees.

There are plenty of quail about here. I had eighteen nests last year. We feed them in the winter and they are never shot at inside the fence by me or anyone else. W. J. B. MARTIN.
Redding.

The Otaheite Orange.

TO THE EDITOR:—In your issue of the 16th, in "Little Known Citrus Fruits," you mention that the notes are taken from a treatise on citrus culture and that the Otaheite orange is probably the most hardy of the citrus family. As the writer has not been favored with any issue of books or bulletins from the State Board of Horticulture for some time, it is impossible to state whether an error has been made in copying, but as a matter of fact the Otaheite orange is not as hardy as the Citrus trifoliata or buds worked on the Citrus trifoliata. The Otaheite has been repeatedly frozen down in this section when nothing but the extremity of the new growth on ordinary standard trees was injured.
Penryn. FRED C. MILES.

We are not sure whether we took the statement about the hardiness of the Otaheite orange from Mr. Lelong's treatise or not. We may have made the deduction from the fact that this variety is commended for ornamental purposes in the Southern Atlantic States, where the ordinary sweet orang is not grown.

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The man who has one or two things to sell always says his is the best.
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Trying to feed trees on available (*not water soluble*) phosphoric acid is like the fox who invited the crane to dine on soup from a shallow dish. The food may have been good, but it was out of reach.

Don't encourage shallow rooting by using a fertilizer that remains on the surface or near the surface of the ground and out of the reach of the feeding rootlets of the tree. For trees, use *water soluble phosphoric acid* and let it go down deep with the rain. It will save much irrigating by causing deep rooting. It costs no more and is more valuable.

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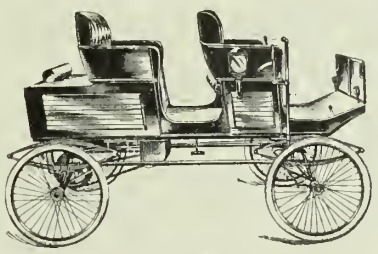
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THE HOME CIRCLE.

Contentment.

I once knew a plowman—Bob Fletcher, by name,
Who was old, and was ugly, and so was his dame;
Yet they lived quite contented and free from all strife,
Bob Fletcher—the plowman—and Judy, his wife.

As the morn streaked the east, and the night fled away,
They would rise from their slumber refreshed for the day;
And the song of the lark as it rose on the gale,
Found Bob at the plow and his wife at the pail.

A neat little cottage, in front of a grove,
Where their morning of life was devoted to love,
Was the solace of age, and to them doubly dear,
As it summoned the past with a smile or a tear.

Each tree had its thought and the vow could impart,
That mingled in youth, the warm wish of the heart;
The thorn was still there and the blossoms it bore,
And the song from its top seemed the same as before.

When the curtain of night over nature was spread,
And Bob had returned from his plow to his shed,
Like the dove on her nest, he reposed from all care
If his wife and his youngsters contented were there.

I have passed by his door, when the evening was gray,
And the hill and the landscape were fading away,
And have heard from the cottage with grateful surprise,
The voice of thanksgiving like incense arise.

And I thought on the proud, who regarded with scorn
The neat little cottage, the grove and the thorn;
And felt how delusive the tinsels of life
Compared to contentment—like Bob and and his wife.

—Townsend Haines.

Lady Slippers.

Once upon a time, long ago, five little fairies met together in the depths of a wood. Although the sun was shining brightly, not a ray of sunlight came into their hiding place beneath the shelter of three stones piled together. About the stones grew masses of wild ferns, whose long fronds were woven closely, making a safe hiding place for the little folks.

They were seated close to each other on a small stone, and talked in whispers lest they should be overheard and sent to bed with a scolding. For the Queen was very particular about the ways and habits of her maids in waiting, and insisted that they must take their sleep at the proper time and not be getting into mischief. As long as the sun shone they must stay under shelter, away from the haunts of mortals, but when night came they were free to come and go.

"Tell us what the secret is, Fluff," whispered one little fairy. "I could hardly wait until they had all gone to bed."

Fluff crept closer and told her story in eager whispers, while the others watched and listened with all their might.

"You see, I was bringing back fresh thistledown for the Queen's bed, and I did not like the thistles at the edge of the wood, they are too big, so I went across the field and a long way beyond. Then I found some with little soft tufts of down, and I filled my bag and started home. Well, it grew heavier and heavier, until by the time I reached the big field I was so tired that I laid it down and crept under a nice thick woodbine to rest. Then I went to sleep, and when I woke up it was broad daylight."

"Oh! Oh!" chorused the little fairies in delight. Just think how you would feel if you rested under a bush late in the afternoon and awoke when it was dark a long way from home. That was the way the little fairy felt.

"Go on! Were you frightened?" they asked.

"A little just at first," Fluff confessed. "But I knew I must go home quickly or the Queen would be worried, so I picked up my bag and started. I got along very well at first, then suddenly I bumped right into something and I heard a big voice say: "Well, well, what is all this?" Oh, I was frightened! You see the sun blinded me and I did not see him."

"Him! Who?"

"Why, a big black beetle. At first I was too scared to say anything; then he told me to get on his back and he would take me into the wood. So I did, and I only had a little way to fly home."

"Is that all the secret?" demanded one little listener. She was getting very sleepy and a little cross.

"No, that's only the beginning. He told me that there is an enchanted pool in the wood beyond the hill, and whoever bathes in it will have the power to change themselves into any shape they please. Only you must jump in at the instant the sun touches the water—and it only shines there once a day at the time the mortals call noon."

"Any one! Then we could do it, couldn't we, Fluff?" they questioned, and Fluff assented eagerly.

For some time they sat with their heads close together, as they discussed the ways and means of carrying out their plan. When they finally separated and fled as quitely as possible to their beds it was decided that the next day, just before noon, while all the other little fairies slept, they would meet at the pool and try its powers.

The sun was creeping around his daily path in the heavens, and had almost reached the highest point in his climb when the fairies met at the pool. Each one had a tale to tell of her narrow escape from capture by one of the guards. But they had finally reached the place in safety, and prepared hastily for the plunge.

They drew off their dainty dresses and hung them carefully on blades of tall grass, out of harm's way. Their little shoes they dropped on the bank, then they stood in a row at the edge of the water, anxiously watching for the right moment to jump in.

A sudden little breeze moved the leaves of a big tree above them, and a sunbeam flashed straight into the dark waters of the pool.

At the same instant five tiny figures jumped into the water and a moment later they were paddling about with little gasps at the cold. Then they splashed gayly about as the sun shone bright and warm on them dazzling them with its brightness.

A shadow fell across the pool and the fairies beheld one of the terrors of their lives—a mortal, and worst of all, a man.

With a sigh of thankfulness he threw himself down on the grass, lying there a moment to grow cool after his hot walk, then he bent and took a long drink from the pool.

The fairies had fled under shelter at his approach, and they waited shivering and terror stricken until he went on his way. Then they ran quickly to their clothes, which still hung unharmed from the grass blades; but alas! the little shoes were ruined. The mortal had sat on them!

Crestfallen and too unhappy to even try to make use of the power they hoped they possessed, the fairies went slowly home.

This time they had been missed and when they arrived the Queen sent for the culprits to be brought before her. Weeping and ashamed they told their story, then stood with bent heads to hear the scolding they knew they deserved.

But the Queen was more grieved than angry.

"You foolish little fairies!" she said. "Don't you know it is I who enchant the pools, and give my subjects power to change themselves into other forms? Don't you know that I only give the power to those who are wise enough to use their knowledge well? But you have been punished enough, and I only give you something to remind you of your folly. Puck," she called, "bring me a willow twig."

Puck brought the twig, and at the Queen's command planted it in the ground. She touched it with her wand, and little branches sprang from it on every side. Then Queen Mab hung the five little pairs of broken shoes on the branches. Once more she touched them with her wand, and they turned into flowers, which hung by slender stems from the willow twig, while here and there a leaf crept out.

"Let those always remind you what foolish little fairies you have been," said the Queen, reproachfully.

And that is the reason that the quaint flowers which grow in our grandmother's garden are called lady slippers.—Mary Gibson in New York Tribune.

Scientific.

An oak tree of average size, with 700,000 leaves, lifts from the earth into the air about 123 tons of water during the five months it is in leaf.

A German scientist recently declared that the age of fishes can be told by their scales. When placed under the microscope these show stripes similar to the bands in the cross section of a tree, which indicate the age of the fish.

"Great results are expected," says Electricity, "from a new discovery of M. De Gall, inspector of forests at Lamur, France, according to a despatch received at the State Department from Vice - Consul - General Hanauer at Frankfort, Germany. The new invention is a method of producing a wood impervious to water and acids alike, and a perfect electrical non-conductor. That is accomplished by means of dry distillation and high pressure which prevents the escape of developing gases and reduces the wood to a hard body of the character of coal, yet without a trace of the organic structure of that mineral. This new body, though hard, can be shaped and polished at will."

The proportionate heating power of coal and wood, says the Rural New Yorker, in answer to an inquirer, has been settled by experiment. It has been found that one pound of charcoal heats seventy-three pounds of water from 32° (which is the freezing point) to 212°, which is the boiling point of water. One pound of anthracite coal heats seventy pounds of water in the same way, and one pound of dry wood heats thirty-five pounds of water the same, so that the coal has just twice the heating power that dry wood has, and a little less than charcoal has. Of course wood that is not dry loses a proportionate heating value corresponding to the quantity of water remaining in it, and air dry wood has on an average 12° of water in it. So that we may reasonably estimate the value of one ton of anthracite coal to be equal to two cords of wood.

"Mamma, I heard somebody to-day say that matches were made in heaven." "I believe that is true, Willie." "Well, do they want matches if there's going to be no night there?"—Australasian.

You May Need Pain-Killer
For Cuts Burns Bruises
Cramps Diarrhœa All Bowel Complaints
It is a sure, safe and quick remedy,
There's ONLY ONE Pain-Killer
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Two sizes, 25c. and 50c.

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A healthy baby is comfortable; and that is enough for a baby. His business in life is to grow.

Aside from acute diseases, his food is the cause of most of his troubles. But Scott's emulsion of cod-liver oil delivers him from it.

He isn't sick; only a little hitch, somewhere, in his machine for turning food into growth.

It is a great thing to do, for a baby, to help him over a hitch with mere food—the emulsion is food that has the tact to get there.

The tact to get there is medicine.

We'll send you a little to try, if you like.
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This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

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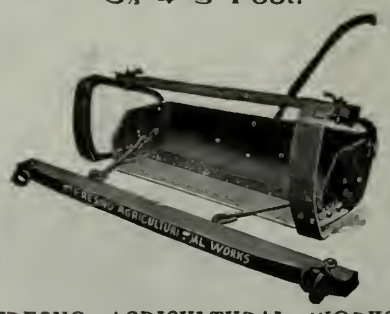
The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,
Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

The Fresno Scraper.
3½-4-5 Foot.



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Big Man With Big Mouth.

[This poem was thought of sufficient merit to be read by the Clerk of the House of Representatives, Feb. 11, for the edification of that honorable body.]

I love the man who knows it all,
From east to west, from north to south;
Who knows all things, both great and small,
And tells it with his tireless mouth;
Who holds a listening world in awe
The while he works his iron jaw.

Ofttimes in evening's holy calm,
When twilight softens sight and sound,
And zephyr breathes a peaceful psalm,
This fellow brings his mouth around,
With its long gallop that can tire
The eight-day clock's impatient ire.

His good, strong mouth! He wields it well!
He works it just for all it's worth.
Not Samson's jawbone, famed, could tell
Such mighty deeds upon the earth;
He pulls the throttle open wide
And works it hard on either side.

Up hill and down, through swamp and sand,
It never stops; it never balks;
Through air and sky, o'er sea and land,
He talks and talks and talks and talks
And talks and talks and talks and talks
And talks and talks and talks and talks.

Good Lord, from evils fierce and dire,
Save us each day; from fear and woe,
From wreck and flood, from storm and fire,
From sudden death, from secret foe,
From blighting rain and burning drouth,
And from the man who plays his mouth.

—Congressional Record.

Excess of Meat Harmful.

Dr. C. Simon says: The eating of meat, which is an inheritance from our cannibal days, should be eschewed. We have in meat a fine food if little is eaten. I might say truthfully, the less eaten the better, and none the best. The human body is but a machine, which, like the engine, requires fuel, and the net result in power must depend largely upon what class of fuel is supplied. If long life is be accepted as a criterion to health, the census of the world furnishes ample opportunity.

In Ireland, an oatmeal an potato-eating nation, the last census shows that about 575 persons were living more than one hundred years of age. Germany, a distinctly meat-eating nation of far more population, shows but seventy-five persons more than a hundred years age.

Whereas, in Servia, where the people live almost exclusively upon vegetable and fruit diet, and which has a very small population, there were found 120 persons whose ages were about 125 years and three whose ages were positively more than 135 years. These facts, which are indisputable evidences and testimony against modern luxurious eating, aside from showing the effects of excessive meat eating, make one gasp, ponder and think. Every individual should ask himself the question: Does he eat to live or live to eat?

He must eat rational, normal food without much gastronomical art being employed in its preparation. There is a long train of diseases from the child's spoiled stomach to the old man's gout that point to incorrect eating in the choice and quantity consumed. When a large amount of food is placed in the stomach for digestion it entails a labor upon the physical economy, producing improper digestion, absorption and elimination, and which materially detracts from the vital strength of the individual.

In the hurly-burly world here in America, where progress must find a man fit or he goes under, conservation of strength and husbanding of energy is a necessity. The increase of Bright's disease is demonstrable proof of the error of incorrect feeding. Whereas, it may be partially due to nerve changes, still the physician must accept the influence of food upon the patient when he changes his diet to a simpler bill of fare.

All religions teach us in their philosophies or by their divine wisdom or centuries of experience that an abstinence from food is at times beneficial.

It is not, in my belief, a question of how cheap a person can live, but rather how well one can live in order to enable him to store up energy to be equal to his work in life and retain health.

Examine the menu of a modern restaurant and you will find as much poisonous material as you will in a drug shop. You will find there are elements from which uric acid, creatin, xanthins and ptomaines producing bodies are manufactured in our stomachs. These would poison us, as they do at times, did not the body protect itself by sending more circulation and increasing the amount of ferments.

This increase and attempt to protect itself represents a long digestion and a long abstraction of the blood from other parts of the body where it ordinarily should be to perform its necessary functions. There is an old motto among the Arabians: "Eat little if thou wouldst think quick." The actual amount of food necessary to ordinary living may be classified as nitrogenous or albuminoid matter, carbo-hydrous or sugar stuffs, acids, mineral salts and water.

Simple diet, sufficient to easily digest containing all these elements, is what is most desirable to a healthy, active life. It seems as if nature would compensate the worldly poor by allowing them only a moderate diet list. It is good that is so, if it enables them to successfully compete with their existing conditions and still enjoy life, if health represents enjoyment.

The poor are usually healthy, and are not troubled to the same extent with gout, liver troubles, Bright's disease, intestinal tuberculosis and other diseases that the rich man is prone to. It is a well-known fact that some people cannot get stout or fleshy no matter what vast quantities of food they may consume, and again that a very careful diet will at times not decrease the weight of a corpulent individual. This is strictly due to improper absorption of food, and for that reason has obesity been termed a disease.

A small quantity of food taken into the stomach will be churned and churned in that organ, and every particle of it will be thoroughly digested, and all the nutritive value of it will be absorbed. Again, on the other hand, if a great deal of food is eaten digestion will be interfered with, and only a very small portion of its nutritive value will be taken up.

It is in this way that the eater who eats little gets more strength and value from his food than the one eats much.—Popular Science.

DOMESTIC ECONOMY.

Various Methods in Which Prunes May Be Used.

NUMBER III.

PRUNE MERINGUE.—Beat stiff the white of one egg; beat in one tablespoonful of powdered sugar; beat in one-quarter cup of steamed and ground prunes; bake fifteen minutes with oven door open. Serve very cold with whipped cream.

PRUNE CHARLOTTE.—To one pint of whipped cream add one cup of steamed and ground prunes. Add lemon juice and sugar to taste. Stiffen with teaspoonful of gelatine dissolved in boiling water.

TURKISH PRUNES.—Steam the prunes until tender. Remove the pits. To two cupfuls of steamed prunes add one-half cup of walnut meats, a little candied orange peel, also citron. Put the whole through a meat or fruit grinder. Work to a smooth paste. Serve with whipped cream.

STUFFED PRUNES.—Steam the prunes until tender. This requires several hours. Remove the pits and fill the cavity with finely chopped walnuts. Serve with whipped cream.

CARAMEL PRUNE PUDDING.—Add to a quart of cooked prunes, while hot, six eggs, whites and yolks beaten together. Line the baking dish with caramel and pour in the pudding. Bake thoroughly. Serve cold. Caramel is made as follows: Into a sauce dish put a small lump of butter; when melted put in enough dry sugar to cover the bottom of the dish, say ¼ inch deep. Let it cook or burn until it is a rich brown color. When cold it can be taken from the dish by striking it smartly, bottom side up, on a cutting board.

PRUNE PUDDING.—Boil one pound of prunes long enough to enable you to remove the pits. Then put the prunes on the fire, adding a small teacup of sherry. Let them stew gently for ten minutes. Make a pudding of two cups of flour, the yolks of four eggs, one cup of sugar (scant), heaping teaspoonful of baking powder. Butter your dish very thoroughly before putting the pudding in. Bake for about twenty minutes. Spread the prunes over the top, cover with a merangue made of whites of the eggs and a teacupful of sugar.

PRUNE WHIP.—One cup of stewed and strained prunes, white of one egg beaten very stiff; beat together.

STEWED PRUNES.—Do not boil the prunes. Allow them to soak over night in cold water—enough to cover the prunes. Then take the prunes out and boil the water in which they have soaked; add sugar to taste and boil fifteen minutes. Then add to the prunes, set off the range and allow them to simmer thirty minutes, then set off to cool.

(TO BE CONTINUED.)

Handling Smoked Meats.

TO THE EDITOR:—Your subscriber at Napa wants to know how to keep bacon and hams after smoking. I will give him my plan. I put up considerable bacon and hams every year, always have them nice and get a good price. After curing and smoking, I wrap all the bacon—side meat—in Manila paper, each piece separate, and pack close in a clean box—any store box will do, though I use a box that bacon was shipped in—and keep in a cool, dry place. The hams and shoulders I hang up in a cool, dark cellar that is dry, as a damp cellar will mold meat.

G. R. WALES.

Lassen county, Cal.

FROM ANOTHER SUBSCRIBER.

TO THE EDITOR:—When the meat is smoked I take a large box that will hold wheat. Cover the bottom 3 inches deep with wheat and place a layer of hams, shoulders or sides on the wheat, but not to touch each other. Pour in more wheat, cover 2 inches, put another layer of bacon, and so on until the box is full. Set in cellar or smokehouse, and you will have good, dry bacon until it is all eaten. L. N. GREGORY.

Hanford, Cal.

CREAM OF CELERY SOUP.—Take two heads of celery, chop finely, and put it in two quarts of water. Boil until tender, rub through a colander. Put one tablespoonful of finely chopped onion in one quart of new milk and bring to a boil. Strain and put with celery water. Let them come gradually to a boil. Cream one heaping tablespoonful of flour with one heaping tablespoonful of butter. Pour over it the boiling soup, stirring constantly to prevent lumps. Salt to taste and serve at once.

COLD ROAST BEEF.—Heat the chafing dish with a tablespoonful of butter. When melted add three tablespoonfuls of red currant jelly, a sprinkle of cayenne pepper, a little salt and a glass of sherry. Cut roast beef into small, thin strips and drop in the chafing dish. Serve hot.

Spray your Fruit Trees and Vines
Wormy Fruit and Leaf Blight of Apples, Pears, Cherries and Plums prevented; also Grape and Potato Rot—by spraying with Stahl's Double Acting Excelsior Spraying Outfits. Best in the market. Thousands in use. Catalogue, describing all insects injurious to fruit, mailed Free. Address
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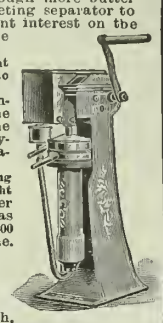
We absolutely warrant it and give free trial to prove it.
Our factory is running double turn, one gang all day and one all night, for the dairyman who sees this machine buys it.
In addition to yielding more butter it is very light running. A 600 lbs per hour Tubular turns as easily as a previous 300 lbs per hour machine. No disks to bother with and get out of order, no complications. Washed in two minutes. Top of milk vat waist high.

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Coughs & Colds Cured with R. Hall's Pulmonary Balsam.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 6, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	79¾@80⅛	—@—
Thursday	79¾@80⅛	—@—
Friday	80⅛@79⅛	79⅜@79⅛
Saturday	79⅜@79¾	78¾@79¼
Monday	79¾@79⅝	79¾@79⅛
Tuesday	79⅜@79¾	78⅞@79¼

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	5s 11⅞d	-s --d
Thursday	5s 11⅞d	-s --d
Friday	5s 11⅝d	6s 0⅛d
Saturday	5s 11⅛d	5s 11⅞d
Monday	5s 11¾d	6s 0⅛d
Tuesday	5s 11⅜d	5s 11⅝d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	99¼@ 99⅓	1 04½@——
Friday	98⅝@ 99	1 04 @1 04¼
Saturday	99 @ 98⅞	1 04⅛@——
Monday	98¾@ 98⅞	1 04 @1 03⅞
Tuesday	98⅞@ 98⅝	1 03⅞@——
Wednesday	99⅛@ 98½	1 04⅛@1 04

*Holiday.

WHEAT.

The spot market has shown very little activity since last review, and firmness was lacking, transfers being possible only at low figures. The outward movement lately has been fairly liberal, but it has been largely of stocks held by shippers or of purchases made in the interior, as there has been no active buying in local grain circles for several months past. Scarcity of ships and high ocean freight rates are still operating against the movement of wheat. The engaged list of vessels for wheat loading at present shows a carrying capacity of less than 30,000 tons, as against over 60,000 tons a year ago. The harbor is practically bare of disengaged tonnage suitable for carrying grain. The ships headed this way will be able to take afloat about 200,000 tons of wheat, provided they have no other cargo, but it is altogether probable that some of these ships will take other merchandise. A year ago the quantity of tonnage to arrive was about 25% greater than at present, aggregating about 250,000 tons capacity, calculated on a wheat basis. Some wheat is going out by steamers in the Central and South American trade, one clearance being thus made the past week of 950 tons of wheat for Peru. Two sailing vessels are on the list for the same destination. The United States visible supply of wheat east of the Rockies was reported at 57,234,000 bushels, indicating a decrease for the week of 302,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 99⅛@98½c.

December, 1901, delivery, $1.04½@1.03⅞.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at 99⅛@98½c; December, 1901, $1.04⅛@1.04.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	95	@ 96¼
Oregon Valley	95	@1 00
Washington Blue Stem	95	@1 02½
Washington Club	95	@1 00
Off qualities wheat	90	@ 92½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s2½d@6s3d	-s-d@-s-d
Freight rates	40@41¼s	37½@38¾s
Local market	$0 96¼@1 00	$0 96¼@0 98¾

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on March 1st and Feb. 1st:

Tons—	Feb. 1st.	Mar. 1st.
Wheat	148,556	*112,805
Barley	51,479	†39,173
Oats	4,077	4,024
Corn	697	490

* Including 75,605 tons at Port Costa, 36,462 tons at Stockton.

† Including 26,064, tons at Port Costa, 6039 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 35,751 tons for the month of February. A year ago there were 177,110 tons wheat in Call Board warehouses.

FLOUR.

In the matter of prices there is no improvement to record, nor is it likely that values will show any material upward trend in the near future. The export movement is of very fair proportions, especially to South America, one steamer taking for above destination the past week 21,300 barrels. The demand on local account is not brisk.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

There was some evidence of a slightly better tone to the market, but quotable values remained in about same position as last noted. The improved feeling was more attributable to recent material reductions in stocks by shipments outward, and to tax time being a thing of the past for the current season, than to any very active inquiry for the time being, either on export or local account. High grade barley is not being offered very freely, but of feed descriptions there is more seeking custom than can be accommodated with immediate sale at prevailing rates, even though values for barley are decidedly low and less than for any other cereal.

Feed, No. 1 to choice	71¼@ 73¾
Feed, fair to good	70 @ 71¼
Brewing, No. 1 to choice	80 @ 85
Chevalier, No. 1 to choice	97½@1 02½
Chevalier, No. 2	85 @ 90
Chevalier, poor	70 @ 75

OATS.

While supplies are not of heavy volume, they are proving more than ample of most descriptions for the demand at full current rates. Buyers are operating very slowly, providing only for current needs, and this promises to be the case during the balance of the season. No marked changes in values are looked for during the next few months, but such as may occur are more apt to be to easier than to stiffer figures.

White Oats, fancy feed	1 42½	@1 47½
White, good to choice	1 30	@1 37½
White, poor to fair	1 20	@1 27½
Gray, common to choice	1 20	@1 37½
Milling	1 42½	@1 47½
Surprise, good to choice	1 42½	@1 50
Black Russian	1 12½	@1 35
Red	1 20	@1 45

CORN.

Stocks of this cereal are seldom lighter in this center than they are at present. There were less than 500 tons in local warehouses on 1st inst. Most of this is Eastern product. Values are ruling steady, with movement very light.

Large White, good to choice	1 15	@1 17½
Large Yellow	1 15	@1 17½
Small Yellow	1 50	@——
Eastern, in bulk (carload lots)	1 08	@1 10

RYE.

There is more offering than is warranted by the immediate demand and the market is unfavorable to sellers.

Good to choice, new	80	@ 82½

BUCKWHEAT.

Aside from small supplies in the hands of local millers, there is none now on market. Purchases can be made only in a limited way, and are possible only at the stiff prices quoted.

Good to choice	2 00	@2 10

BEANS.

Very little doing in beans of any description, and it is altogether probable that the market will remain quiet during the greater part of the summer. Stocks of white beans are too light to admit of any special activity, and the prices at which they are now held are too high for dealers to take hold in other than a very limited way and for most immediate needs. There are fair quantities of colored beans, mainly Pinks and Bayos, which are being offered at comparatively easy rates, but movement in them is not brisk. Limas are ruling steady, with only very limited stocks in this center.

Pea, fair to good, 100 lbs	——	@——
Small White, good to choice	4 75	@4 90
Lady Washington	4 10	@4 25
Butter	4 25	@4 50
Pinks	2 15	@2 25
Bayos, good to choice	2 65	@2 75
Reds	3 00	@3 25
Red Kidney	4 00	@4 25
Limas, good to choice	5 65	@5 75
Black-eye Beans	2 75	@3 00
Horse Beans	1 75	@2 00
Garhanzos, large	2 00	@2 25
Garhanzos, small	1 25	@1 75

DRIED PEAS.

Same inactivity as previously noted. Market for choice Green is moderately firm at ruling rates, but is dull and weak for Niles.

Green Peas, California	2 75	@2 85
Niles Peas	1 75	@1 90

WOOL.

Nothing of consequence doing in the local market, and no prospect of any noteworthy business until after the opening of the new season, now very near at hand. Dealers are casting their lines to secure new wools in the interior, and will intentionally neglect this market until they have completed their work in the country. Values here are necessarily largely nominal at present. Holders are as a rule contending for higher figures than are quotable.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarse to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

The market presents very little of noteworthy interest. Stocks are now largely in the hands of jobbers, making it difficult to name wholesale values. Jobbers are quoting as high as 20c, but this is more of a retail price than a wholesale figure. It would have to be a strictly choice hop for which 16c could be readily realized at this date on offerings from first hands.

Good to choice 1900 crop	13½	@16

HAY AND STRAW.

Offerings of hay are of quite liberal volume, as compared with the demand, and the market presents an easy tone. There are no special changes to record in quotations, but sales at full figures are the exception rather than the rule. That the market will develop any special firmness in the near future is not probable.

Wheat	8 00	@12 50
Wheat and Oat	8 00	@11 50
Oat	7 00	@11 50
Barley	6 00	@ 9 50
Volunteer	5 00	@ 7 00
Alfalfa	8 00	@ 9 50
Stock	5 00	@ 7 00
Compressed	8 00	@12 50
Straw, ℔ bale		40@ 47½

MILLSTUFFS.

Market for Bran has been inclining in favor of buyers, the demand showing decrease, on account of the abundance of green feed. There are no heavy supplies of either Middlings or Shorts, but more than enough to satisfy the immediate inquiry. Rolled Barley is marked down. Milled Corn was without quotable change.

Bran, ℔ ton	14 50	@15 50
Middlings	17 00	@19 00
Shorts, Oregon	15 50	@17 00
Barley, Rolled	15 50	@16 00
Cornmeal	25 50	@ ——
Cracked Corn	26 50	@ ——

SEEDS.

Two lots of Mustard Seed arrived the past week, both having been held for some time in speculative hands and above prices obtainable. Some of this seed was limited to 6c., which accounts for it being still on market. Aside from above lots, there is virtually no Mustard remaining. Business in other seeds noted below is of light volume and at generally unchanged values.

	Per ctl.	
Mustard, Trieste	——	@——
Mustard, Yellow	——	@——
Flax	2 50	@3 00
Alfalfa, Utah	9	@ 9½
Alfalfa, California	8	@ 8½
	Per lb.	
Canary	3½	@ 4
Rape	2	@ 2½
Hemp	3	@ 3½

BAGS AND BAGGING.

There is considerable business doing in Grain Bags for forward delivery, and market is moderately firm at current rates. While prospects are good for a large quantity being required this season, the supply is likely to prove equal to requirements. At the same time efforts may be made to crowd prices to higher levels. Other bags are ruling quiet and are being held as previously quoted.

Calcutta Grain Bags, buyer June-July	6⅝	@—
Calcutta Grain Bags, spot	6½	@—
San Francisco Grain Bags, 22x36, spot	6½	@—
State Prison Bags in lots of 2000, ℔ 100	5 65	@—
Wool Sacks, 4 lbs	32½	@35
Wool Sacks, 3½ lbs	30	@32½
Fleece Twine	7½	@—
Gunnies		—@12½
Bean Bags	4¾	@ 5¼
Fruit Sacks, cotton	6½	@ 7¼

HIDES, PELTS AND TALLOW.

A local dealer reports increased trade in wet Salted Hides, but demand is confined to best stock. Dry Beef Hides are in good request at current rates, while Dry Horse Hides are neglected, only salted stock being wanted of the latter. Pelt market is slow and weak. Tallow is steady.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½@10	8½
Medium Steers, 48 to 56 lbs	9	7
Light Steers, under 48 lbs	8	7
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	7
Wet Salted Kip	9	8
Wet Salted Veal	9	8
Wet Salted Calf	10	9
Dry Hides	15½	13½
Dry Kip and Veal, 11 to 16 lbs	15	12
Dry Calf, under 4 lbs	16	14
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 50
Dry Colts' Hides	50	@ —
Pelts, long wool, ℔ skin	75	@1 00
Pelts, medium, ℔ skin	60	@ 75
Pelts, short wool, ℔ skin	30	@ 50
Pelts, shearling, ℔ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4	@ 4¼
Tallow, No. 2	3½	@ 3¾
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

While there is not much honey of any sort now offering, there is more than can be accommodated with custom at current rates, the market being weak at the quotations. Stocks of both Comb and Extracted are principally amber grades.

Extracted, White Liquid	6½	@ 7
Extracted, Light Amber	5	@ 6
Extracted, Amber	4½	@ 5
White Comb, 1 lb frames	13	@14
Amber Comb	11½	@12½
Dark Comb	8	@ 9

BEESWAX.

The little business doing in this article is at practically unchanged rates, but easier prices are anticipated the coming season.

Good to choice, light, ℔ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

Beef remains quotably as last noted, with no heavy offerings, but market quiet. Mutton is selling at slightly easier figures, with the demand at the moment not very brisk. Lamb is in slightly increased receipt, but still sells fairly well. Veal of desirable size is not being offered in great quantity and is being favored with a tolerably firm market. Hogs are in only moderate supply, with arrivals mostly Eastern, and current prices are being well maintained.

Beef, first quality, dressed, net ℔ lb	7¾	@ 8
Beef, second quality	7½	@ 7¾
Beef, third quality	6½	@ 7½
Mutton—ewes, 9@9½c; wethers	9½	@10
Hogs, hard grain fed, medium	6½	@ 6¼
Hogs, small, fat	6⅛	@ 6¼
Hogs, large, hard	5¾	@ 5¾
Hogs, feeders	5¼	@ 5½
Hogs, country dressed	7½	@ 8
Veal, small, ℔ lb	7	@ 9½
Veal, large, ℔ lb	7	@ 8½
Lamb, spring, ℔ lb	11	@—

POULTRY.

Market for most kinds of poultry showed fairly healthy condition, with offerings as a rule not excessive of either Eastern or home product. Large and fat young chickens brought good average prices, as did also large young Ducks and Goslings in fine condition. Old chickens in good flesh brought fair figures. Turkeys were not much sought after, and especially were Gobblers in poor request. Pigeons brought about as good prices as proceding week.

Turkeys, live hens, ℔ lb	12½	@ 14
Turkeys, live gobblers, ℔ lb	10	@ 11
Turkeys, Dressed, per lb	12	@ 13
Hens, California, ℔ dozen	4 00	@5 50
Roosters, old	4 00	@4 50
Roosters, young (full-grown)	6 00	@6 50
Fryers	5 00	@5 50
Broilers, large	4 50	@5 00
Broilers, small	3 00	@4 00
Ducks, old, ℔ dozen	4 00	@5 00
Ducks, young, ℔ dozen	6 00	@7 00
Geese, ℔ pair	1 50	@1 75
Goslings, ℔ pair	2 50	@3 00
Pigeons, old, ℔ dozen	1 50	@——
Pigeons, young	2 50	@3 00

BUTTER.

The tendency of the market has been in favor of buyers, with supplies on the increase and prospects of prices ruling still lower than are now current before there is any extensive packing. While market is weak throughout, defective qualities are especially difficult to move at satisfactory figures.

Creamery, extras, ℔ lb	18	@—
Creamery, firsts	15	@—
Creamery, seconds	—	@—
Dairy, select	15	@—
Dairy, firsts	13	@14
Dairy, seconds	12	@—
Dairy, soft and weedy	—	@—

Mixed store	11	@—
Creamery in tubs	17	@18
Pickled Roll	17	@18
Firkin, California, choice to select	17	@18
Firkin, common to fair	15	@16

CHEESE.

There are no noteworthy accumulations, but receivers are free sellers at current rates, while buyers are confining their purchases to immediate needs. Under the circumstances, the market naturally presents an easy tone.

California, fancy flat, new	9¼	@—
California, good to choice	9	@ 9½
California, fair to good	8½	@ 9
California Cheddar	—	@—
California, "Young Americas"	9	@10

EGGS.

As anticipated in last review, packing has begun. There is a good demand at current values for all desirable qualities. It is not likely that lower prices than are now ruling will be experienced for choice stock this season.

California, select, large, white and fresh.	13	@14
California, select, irregular color & size.	12	@13
California, good to choice store	12	@13
Eastern, as to section and grading	—	@—
Eastern, cold storage	—	@—

VEGETABLES.

The weakness last noted in the Onion market has since been still more pronounced. The recent stiff prices caused consignments of Onions to be rushed in from numerous quarters, resulting in much heavier quantities offering than demand could be found for at anything near the high figures which had been temporarily established. Buyers have been holding off and values have not been clearly defined. Peas were in increased receipt and lower. A large consignment of Tomatoes arrived from Mexico, and this vegetable was offered at a decline.

Asparagus, ℔ lb	7	@ 15
Beans, String, ℔ lb	5	@ 8
Cabbage, choice garden, ℔ 100 lbs	1 00	@1 25
Cauliflower, ℔ dozen	50	@ —
Egg Plant, ℔ lb	12½	@ 15
Garlic, ℔ lb	3	@ 4
Onions, Yellow Danver, ℔ cental	2 50	@3 00
Peas, Sweet, garden, ℔ lb	3	@ 6
Peppers, Green Chile, ℔ lb	10	@ 15
Rhubarb, ℔ lb	4	@ 6
Squash Summer, ℔ hox	1 00	@1 25
Squash and Pumpkin, ℔ ton	——	@——
Tomatoes, ℔ crate	50	@1 25

POTATOES.

The market was liberally stocked with Burbank Seedlings, other than strictly fancy qualities, and the general run of offerings were obtainable at easy figures, buyers having the advantage. A few Oregon Peerless sold at moderately firm prices for seed, this variety being in light stock. Market for Oregon Garnet Chile showed no quotable improvement, although stocks of same were not especially heavy. Sweets were in liberal supply, as compared with demand, and were offered at easy figures.

Burbanks, River, ℔ cental	30	@ 60
Burhanks, Petaluma-Tomales, ℔ ctl.	35	@ 60
Burhanks, Salinas, ℔ cental	75	@1 10
Burhanks, Oregon, lb cental	60	@1 00
Early Rose	60	@ 70
Garnet Chile, ℔ cental	65	@ 75
Peerless, ℔ cental	65	@1 00
Sweet Potatoes, Yellow, ℔ cental	85	@1 00

The Fruit Market.

FRESH FRUITS.

While Apples are still on market, the quantity offering is light, and present supplies are mainly Pippins. Select Spitzenberg or fancy Greenings would command stiff prices and above quotable rates, but they are not to be had in noteworthy quantity. Stocks of fresh Apples are likely to be entirely out at an early date. Strawberries will be soon coming forward, and early consignments in prime condition will doubtless meet with a good market.

Apples, fancy, 4-tier hox	1 50	@ 2 00
Apples, good to choice, ℔ 50-lb box.	85	@ 1 00
Apples, common to fair, ℔ 50-lb box.	50	@ 75

DRIED FRUITS.

In the market for cured and evaporated fruits there is the same lack of activity and absence of strength as previously noted. As there are only about three months more before the new season will be upon us, a speedy and radical improvement in the dried fruit trade will be necessary to wipe out remaining stocks before new fruit will begin to put in an appearance upon the market. Apricots other than fancy qualities are in larger stock than any one imagined early in the season would be the case at this date. There are some very common qualities which are receiving scarcely any attention at any price. On good to choice Apricots concessions from recent asking rates are being granted, in endeavors to effect a more speedy movement than has lately been experienced. Peaches at low prices have lately taken the lead in point of favor with buyers, but only at low figures are they salable, the bulk of the business being within range of 3½@4½c for good to choice. Apples are offering at figures discouraging to the producing interest, and then are moving in only a limited way. Pears are to be had at values correspondingly low with those current on Apples, and then receive scarcely any attention on domestic account, although some have been lately forwarded abroad. Of Prunes it is claimed there are fully 3500 ten-ton carloads yet to be marketed. The outside or non-Association $15@20 per ton small prunes are, however, becoming a scarce article. There are advices of recent sales of 150-160's in Germany at figures netting 1c per pound here. The directors of the Cured Fruit Association have been discussing plans this week for the more speedy movement of remaining stocks of Prunes, and bid fair to accomplish the purpose in view if it can be effected through advertising the merits of the Prune and offering the fruit at low figures.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½	@ 6
Apricots, Royal, choice, in sacks, ℔ lb	6	@ 6½
Apricots, Royal, fancy	7	@ 8
Apricots, Moorpark	9	@10
Apples, in 50-lb boxes, rings, pressed, fancy	4½	@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	2½	@ 3½
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5½	@ 6
Peaches, unpeeled, choice	4	@ 4½
Peaches, peeled, in boxes	11	@14
Pears, unpeeled Bartletts, halved, fancy.	5	@ 6
Pears, halved, unpeeled Bartletts	3	@ 4
Pears, quartered, unpeeled Bartletts	3	@ 4
Plums, Black, pitted	4	@ 5
Plums, White and Red	5	@ 6
Prunes, Silver	4½	@ 6

COMMON SUN-DRIED.

Apricots	3½	@ 4½
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	1½	@ 2½
Figs, White	2½	@ 3½
Peaches, unpeeled	3	@ 5
Pears, prime halves	2	@ 3

Prices for 1900 crop Prunes, as named hy the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ½c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

The Raisin market presents no new developments or especially noteworthy features. The Association has complete control and prices remain unchanged.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb hox	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ hox	1 60	@—
do do 2-crown, ℔ hox	1 50	@—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb	—@ 7	
Loose Muscatel, 3-crown	—@ 6½	
Loose Muscatel, 2-crown standard	—@ 6	
Loose Muscatel, seedless	—@ 6½	

(Above prices for loose raisins are for 50-lh boxes.)

Loose Muscatet Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached. 7@8c.

California Dried Fruit at New York.

NEW YORK, March 6.—Evaporated apples, common, 3¾@4¾c; prime wire tray, 5@5⅝c; choice, 5½@6c; fancy, 6@7c.

California Dried Fruits.—Market slow and asking prices unchanged.

Prunes, 3¼@6½c.

Apricots, Royal, 7½@12c; Moorpark, 9@15c.

Peaches, unpeeled, 6½@10c; peeled, 14@18c.

CITRUS FRUITS.

There has been a surfeit of low-grade Oranges foisted upon the market by auction, and judging from the figures realized, it would have been better for the producers if some of this fruit had never been forwarded. Sales of poor Navels were made at 40c per box Strictly select Navels were not obtainable in the open market under $2 per box. Lemons were in fair request, owing to warm weather and scarcity of Limes, but prices showed no very great quotable improvement, stocks of Lemons continuing liberal.

Oranges—Navel, ℔ hox	75@2 00	
Seedlings, ℔ hox	65@1 00	
Tangerines, ℔ half hox	75@1 25	
Grape Fruit, ℔ hox	75@1 50	
Lemons—California, select, ℔ box	2 25@2 50	
California, good to choice	1 50@2 00	
California, common to fair	75@1 25	
Limes—Mexican, ℔ box	7 50@8 00	
California, small box	——@——	

NUTS.

The market is quiet throughout. Almonds still incline in favor of buyers. Walnuts of No. 1 quality are fairly steady, stocks of same being light. Peanuts are in fair request at unchanged values.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@13
California Almonds, soft shell	9	@11
California Almonds, hard shell	6	@ 7
Walnuts, White, soft shell	7½	@ 9½
Walnuts, White, California, standard	7	@ 9
Peanuts, California, fair to prime	4½	@ 5½
Peanuts, Eastern, hand-picked	5½	@ 6
Pine Nuts	5	@ 6

WINE.

The same firm tone previously noted as existing in the wine market continues to be experienced. Dry wines of last year's vintage remain quotable at 19@22c per gallon, with very little offering from first hands. Changes in values in the near future are more apt to be stiffer than to easier figures. A large portion of the stock of the Wine Dealers' Association has passed into the hands of several prominent bankers and capitalists. All the large wine concerns are now in the Association and under one management.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	71,622	4,352,796	4,150,584
Wheat, centals	596,987	5,643,207	4,375,702
Barley, centals	97,507	3,044,622	4,334,359
Oats, centals	6,175	535,136	621,808
Corn, centals	1,070	81,484	94,424
Rye, centals	400	103,922	89,910
Beans, sacks	4,571	512,059	324,586
Potatoes, sacks	29,267	1,182,914	937,590
Onions, sacks	4,010	142,945	134 568
Hay, tons	2,685	119,318	116,899
Wool, bales	81	23,294	36,275
Hops, hales	...	6,907	9,114

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	8,704	2,463,750	2,826,716
Wheat, centals	543,449	5,334,240	3,664,526
Barley, centals	70,840	1,840,936	3,473,348
Oats, centals	...	47,561	32,792
Corn, centals	...	2 269	13,815
Beans, sacks	1	10,565	20,997
Hay, hales	...	82 579	97,835
Wool, pounds	...	409,631	3,985,992
Hops, pounds	2,650	531,083	942,801
Honey, cases	...	1,642	3,307
Potatoes, packages	739	99,443	55,659

Cyphers Incubators.

The Pacific coast agency for these justly popular incubators is now in the hands of E. J. Bowen, No. 815 Sansome street, San Francisco, who is in receipt of several carloads of the various sizes, and finding ready sale for them. The catalogue issued by the Cyphers Incubator Co. is comprehensive and instructive, containing many photographic reproductions of poultry yards in different parts of the country. Send to the above firm for one.

FOREMAN WANTED FOR LARGE RANCH, San Gabriel valley. Special knowledge of deciduous fruit handling and drying absolutely necessary. Must he a rustler. Married; no family preferred Address, stating *age, experience, wages* and *references*, to Parkers & Haig, San Gabriel, Cal.

"Fruit"

To raise good fruit you must have Potash. Fertilizers containing at least 8 to 10% of Potash will give best results on fruits of all kinds.

Write for our pamphlets, which should be in every farmer's library.
They are sent free.

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Prof. S. B. Green's book, 240 pages, 120 illustrations, (regular price, $1.25) used in all leading colleges, free to every one buying Seed Drills.
NEW UNIVERSAL HAND SEEDERS and CULTIVATORS
Suitable for every class of work.
STANDARDS OF AMERICA.
All styles. Only combination 1 and 2 wheel cultivator and drill made. Everyway adjustable. All our tools have tough oak bent handles and are made of best materials throughout. Popular prices. Send for catalog, describing complete line, and valuable book.
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P & B Building Paper is made of rope manilla stock thoroughly saturated with P & B Paint. It will last for years and not be affected by gases, fumes, heat, cold, water or fire.

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Mica Axle Grease

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make a specialty of selling good raisin vineyards. Correspondence solicited.
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Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.
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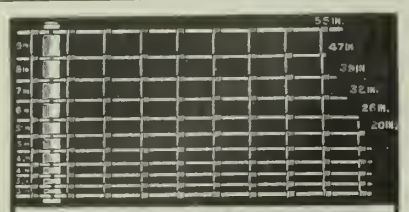
Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with Asphaltum.



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If you cannot find our local agent write to American Steel & Wire Co., San Francisco, Cal.

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We want an experienced, skilled man having some capital of his own to invest therein, as working manager of a small canning, pickling and preserving establishment about to be constructed. Ample supplies of fruits and vegetables. Excellent market, this being the distribution center for a large mining, lumbering and stock country. No one need apply unless he has at least $1000 cash of his own to invest in the concern. Address

LEWISTON WATER & POWER COMPANY, LEWISTON, IDAHO.

When a Tree Falls across a wire fence, when a bull or a runaway team run into it, how much benefit is a quarter inch cross wire? Isn't it a damage? Think of it.

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ALLIGATOR BOX PRESS can bale 22 tons of hay in 10 hours or NO PAY. Circulars Free.

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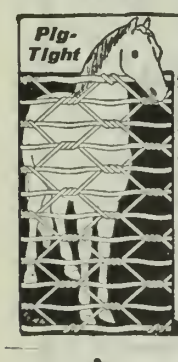

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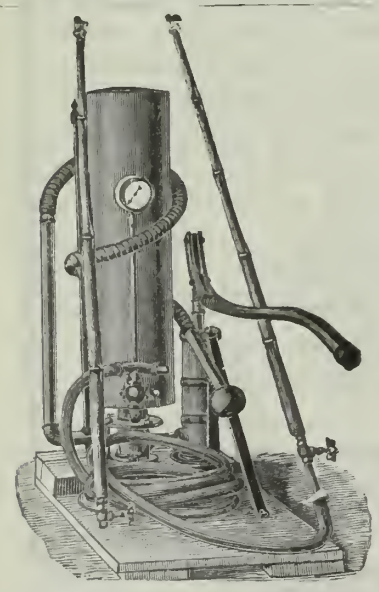

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BEAN SPRAY PUMP CO., LOS GATOS, CAL.

We are the largest manufacturers of Steel Wheels and Truck Wagons in the World. Write for Catalogue. Havana (Ill.) Metal Wheel Co.

Uncle Sam's Expenses.

A very large proportion of the annual expenses is for pensions, the largest single expense of the federal government. This expenditure was the largest in 1893, when it amounted to $159,357,557.87. The smallest expenditure since that period was in 1899, when it was $139,394,929.07; for 1900 it was $140,877,316. The pension burden in 1893 was $2.37 per capita, while during the last fiscal year it was $1.84, which the people of the United States pay to carry out the promises made at the time of the Cival War.

The expenses of the War Department were the largest in the history of the country in 1865, when they exceeded $1,000,000,000. In 1871, when the effects of the war and reconstruction had virtually passed away, they were reduced to $35,799,992. They varied from that period, never exceeding $49,500,000, until 1894, when they were over $54,500,000. This point was not reached again until the first year of the Spanish war (1898), when they were nearly $92,000,000. They were almost $230,000,000 in 1899, but for the fiscal year ending June 30, 1900, were reduced to $134,774,767.

The Navy Department expended in 1871 nearly $19,500,000. The expenditures varied until 1897, when they were over $34,500,000; in 1898, nearly $59,000,000; in 1899, nearly 64,000,000, and for the fiscal year 1900, $55,953,078.

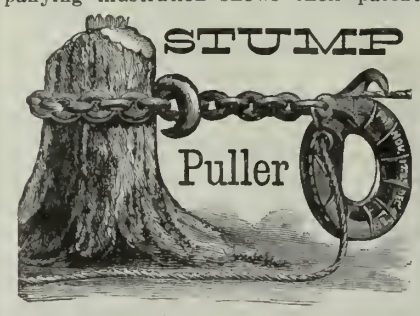
The expenditures on account of the Indians grew gradually from the first half of the century until they reached the highest point in 1893 when they were $13,345,347.27; they are now over $10,000,000.

The greatest expenditure for interest on the public debt was in 1867, being $143,781,592. This payment gradually decreased until 1892, when it was $23,378,116,.23. It has been gradually increasing since that time, until for the fiscal year 1900 it was $40,160,333.

The expenditures for civil and miscellaneous items, including the expenses of Congress and of all the departments and offices in Washington other than the War and Navy Departments and the payments that have already been noted, were in 1871 nearly $60,500,000. There was not very much change in this amount until 1885, when they reached $87,500,000, and in 1891 over $110,000,000. The highest amount paid on this account was in 1899, when it was $119,191,265. For 1900 it was reduced to over $105,773,190.—Carroll D. Right in Century.

A Hard Proposition.

A piece of stumpy land is a hard proposition. It is trying on the man and on the team which tries to work it; is extremely expensive, for a stump takes up a whole lot of ground which yields no return. The Milne Manufacturing Co. of Monmouth, Ill., furnish the Hawkeye stump puller for such work. The accompanying illustration shows their patent



wire rope coupler, by which the chain which goes around the stump is fastened to the wire rope, by means of which one can fasten at once to any stump or tree standing anywhere along the line of the rope without waiting to wind up until the end of the rope is brought to the stump or tree to be pulled. Send for the Milne catalogue.

Best Liniment in the World.

LINCOLN, MINN., Mar. 29, 1900.

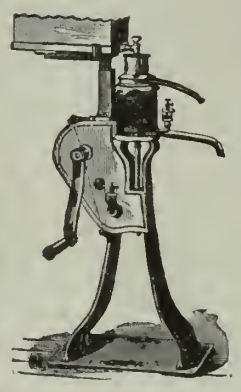
My horse went lame while plowing and was lame for four months. In the winter his fore leg swelled up to the shoulder, and he could not raise his foot from the ground. The bottle of GOMBAULT'S CAUSTIC BALSAM you sent me cured him all right and cured a winogall of five years' standing. I have two-thirds of the bottle yet. Best liniment in the world. D. B. McDONELL.

Elgin Watches sold by jewelers everywhere in various sizes and styles. Prices to suit. Send for free booklet. Elgin National Watch Co., Elgin, Ill.

Another Knockout for the DeLaval by the United States

LAWTON, WIS., Jan. 31, 1901.

This is to certify that the Alpha DeLaval No. 2 and the United States No. 6 had a contest to prove the merits of the two at P. L. Place's farm at Lawton, Wis. The Judges were appointed by Mr. P. L. Place and points to be considered were:



First—Cleanness of Skimming.
Second—Durability and Workmanship.
Third—Easy Running.

We, the undersigned, decide in favor of the United States. **All three points having been given to the U. S.**

A. S. BARG, PEDER HALVORSEN, PEDER PEDERSON, } Judges.

Witnesses:
HENRY A. HANSON, R. L. RASMUSON, CARL CHRISTOPHERSON, M. H. HANSON, A. H. HANSON, GEO. P. GROUT, MARTIN HANSEN, P. L. PLACE.

Note the Fact that the United States won on every point, also that the U. S. was a $100.00 machine while the DeLaval was $125.00, which proves again very conclusively the truth of our claim that the

IMPROVED U. S. SEPARATOR IS THE BEST

Representatives Wanted in Unassigned Territory to Handle Our Goods.

Catalogues and full particulars to be had for the asking.

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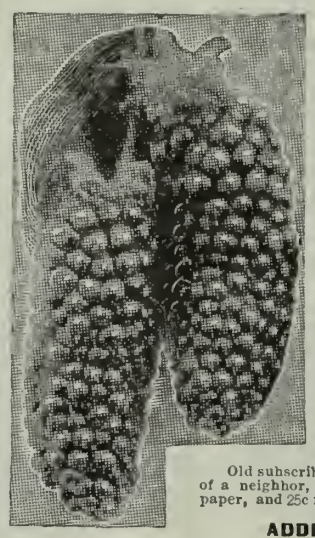
POSTPAID

to every new subscriber sending 25c (in stamps) for the PACIFIC COAST FRUIT WORLD 3 months. These two plants would cost you in the regular way not less than 50 cents. You want them—ought to have them—so act quick.



WRITE TODAY.

In order to introduce our "mammoth" 20 page FRUIT WORLD (Weekly) into thousands of rural homes, that ought to, but do not now take it, we have arranged with the Pajaro Valley Nursery (sole owners of the original plants from Judge Logan), to make this big offer.

The FRUIT WORLD is a valuable weekly paper for the rural home. The paper that uses the telegraph wires and keeps you reliably posted on the markets. The paper of which Prof. D. T. Fowler, Leonard Coates and Geo. P. Hall are horticultural editors.

THE MAMMOTH BLACKBERRY

promises to outlogan the famous Loganberry. Every progressive rural home will want to make a test planting of this accredited (and delicious) horticultural success.

Geo. C. Roeding, originator of the California grown Smyrna fig says:

"Grows entirely unlike any other blackberry plant known. It is a rampant grower, trailing on the ground and under favorable conditions will grow twenty feet in a season; the canes are large, of deep red color when exposed to the sun; the foliage is large, thick, of a deep green color. Enormously productive and exceedingly early, ripening three weeks before other cultivated kinds. Fruit enormous, specimens measuring 2 1-2 inches long; seeds small, soft and abundant, core small, soft. In size and flavor, said to surpass all other varieties of blackberries."

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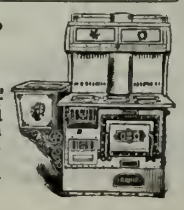
WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. **Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.**



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ORANGES, LEMONS, POMELOS.

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Ornamental Trees, Roses, Fruit Trees and Small Fruit Trees.

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PALMS (Araucaria excelsa),

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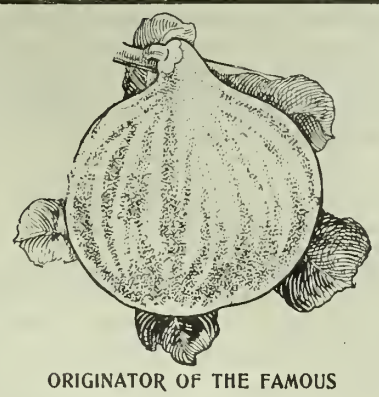

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Trees of this variety in quantities.

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ORANGE and
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ORANGE COUNTY NURSERIES.

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Deciduous and Citrus Trees and Ornamentals.

Muir Peaches:

		Per 100.	Per 1000.
¾ to 1 in.	4 to 6 ft.	$20 00	$180 00
½ to ¾ in.	4 to 6 ft.	$15 00	$130.00
	3 to 4 ft.	$12.00	
	2 to 3 ft.	$10.00	

SEND FOR PRICE LIST.

RICHMAN & MILLS, Proprietors,
FULLERTON, CALIFORNIA.

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QUICK FERTILIZER.

There is nothing in the American market to-day that acts so quickly and surely as a fertilizer as

NITRATE OF SODA.

Apply to the surface in the spring. A small quantity does the work. Watch the crops closely and when they look sick or make slow growth apply the remedy promptly.

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WHICH IS

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MURIATE OF POTASH, SULPHATE OF POTASH,

For Sale by BALFOUR, GUTHRIE & CO., 316 California St., San Francisco.

Patrons of Husbandry.

Tulare Grange Meeting.

To THE EDITOR: — Tulare Grange met on Saturday, the 2nd, and a class of seventeen received the third and fourth degrees. The work of conferring the degrees was done in an impressive manner, and one that showed ability and care on the part of the officers.

The Harvest Feast, for extent, variety and preparation, was extra good and appetizing.

After the Harvest Feast the committee appointed at a previous meeting made a partial report on co-operation as carried on by the trade card system, the State agency and the plan known as the Rochdale.

The trade card and State agency plans of buying have been tried, with limited success, by a number of Granges. The Rochdale plan is new in California, but seems to be gaining favor fast. There are now about thirty stores, in different portions of California, doing business under this system, and while it is still in the experimental stage it is meeting with a good deal of favor, and is well spoken of by those who have enquired into it. The plan is an organized company, each member having only one share and one vote, no proxies. The company buys for cash and sells for cash, pays interest on the paid-up capital, sets aside a per cent for a sinking fund and divides the remainder of the profits among the stockholders in proportion to their purchases. There is nothing of the labor exchange element in it. It pays United States coin for everything it buys, and sells only for the same coin or equivalent. The committee asked for and was granted further time to make a final report.

The Secretary read resolutions sent by the State Lecturer condemning the State Harbor Commissioners' methods. After due consideration of the same by the Grange they were passed and the Secretary directed to send copies to our Assemblyman and Senator in the Legislature.

The subject of appropriations by the State of California in connection with similar appropriations by Congress for building dams restraining the debris from hydraulic mines was brought up.

The Grange was startled by the information that of the $250,000 heretofore appropriated by the State for this purpose $50,000 has been spent in salaries and not one thing done in the way of constructing restraining dams.

A resolution was passed requesting the Governor to appoint Prof. G. W. Worthen, Master of the State Grange of California, to the vacancy on the Board of Trustees of the State Normal School at San Jose.

A communication from the State Grange Committee on Women's Work was received by the Secretary and referred to a committee of the sisters.

The subject of Farmers' Institute in Tulare and Grange picnic will be considered at the next Grange meeting.

J. T.

Fort Worth Stock Show.

The special prizes of $15 each offered by the Pasteur Vaccine Company for the best Texas bred and raised Hereford and Shorthorn yearlings in the show were won by Messrs. W. S. & J. B. Ikard of Henrietta, Texas, with their yearling bull, "Warrior 5th," and by Col. J. W. Burgess of Fort Worth, Texas, with his Shorthorn heifer, "Cambridge Rose 8th." The special prizes of $10 each offered by the same company for the best grade Hereford and grade Shorthorn yearlings, Texas bred and raised, were won by Mr. Tom Hoben of Nocona, Texas, and Mr. V. O. Hildreth of Aledo, Texas.

The Pasteur Vaccine Company is well known among cattle raisers on account of its celebrated Blackleg vaccine which was first introduced into this country in 1895. Since that time over 2,000,000 calves have been successfully treated in the United States and Canada with "Pasteur vaccine." The company is just issuing some fresh literature which should be read by every cattleman. It will be mailed free on application to its head office in Chicago or to its branch offices at New York, Omaha, Kansas City, Fort Worth and San Francisco.

THE Kentucky shoe drill has a detachable heel, which can be removed for sharpening in a minute or can be replaced with a new drill for less than it costs to sharpen an old style solid shoe. The heel piece, as illustrated, is drop-forged from

tool steel and is practical. The Kentucky drill is equipped with a simple, straight, flat, frictionless pressure spring, which makes the draft lighter. Send to the manufacturers, Brennan & Co., Southwestern Agricultural Works, Louisville, Ky., for circulars.

AN unusually handsome catalogue is that of the Stover Mfg. Co. of Freeport, Ill., illustrating and describing their Samson windmill. A copy will be sent anywhere on request, and it is worth seeing.

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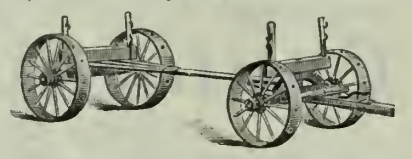

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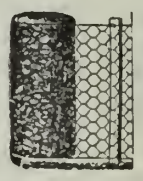

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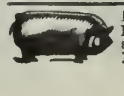

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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING FEB. 19, 1901.

668,551.—SLAT FASTENER—M. L. Akers, Ione, Or.
668,279.—PUNCHING BAG—W. C. Bean, S. F.
668,481.—SEWING MACHINE—C. H. Benoit, San Jote, Cal.
668,305.—CAN HEADING MACHINE—W. S. Case, Haywards, Cal.
668,488.—AMALGAM SQUEEZER—J. V. Coleman, S. F.
668,285.—BOOT CLEANER—F. Dayton, Portland, Or.
668,556.—CLOTHES WRINGER—F. H. Edmonds, Ridgefield, Wash.
668,307.—PULLEY—F. F. Fenlason, Seattle, Wash.
668,171.—FIREPLACE FRONT—E. J. Field, Spokane, Wash.
668,287.—DEGERMINATING WHEAT—J. Frey, San Miguel, Cal.
668,181.—CURTAIN FIXTURE—C. C. Haub, S. F.
668,375.—AIR SHIP—A. F. Hubbard, Simmler, Cal.
668,292.—VEHICLE TIRE—F. J. Johnston, Sacramento, Cal.
668,451.—ENGINE—J. D. McFarland, Jr., S. F.
668,536.—RAILWAY CAR—F. C. Millar, Tracy, Cal.
668,337.—LUBRICATOR—O. Newhouse, S. F.
668,317.—MINER'S CANDLESTICK—G. T. Parsley, Hornbrook, Cal.
668,343.—SAWMILL—A. E. Roe, New Whatcom, Wash.
668,320.—SOLDERING TOOL—W. A. Rose, Santa Rosa, Cal.
668,300.—INSULATOR—H. E. Waite, S. F.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

VEHICLE TIRE.—No. 668,292. Feb. 19, 1901. F. J. Johnston, Sacramento, Cal.

This tire is of the class of resilient tires used for vehicles and consists of an outer tube with a filling of light elastic material in transverse sections centrally pierced, and a binding rod running through these sections, with means for connecting the ends of the rod, and means extending from the ends of the rods through the rim by which these ends are adjusted from outside the tire.

CAN HEADING MACHINE.—No. 668,305. Feb. 19, 1901. W. S. Case, Haywards, Cal.

This machine is designed for placing the heads upon the ends of metal cans and consists of endless chains of segments adapted to grasp the cans between them, wheels or drums journaled with relation to each other, so that the two sets of segments will be brought together and caused to register and travel in a line between the receiving and discharge end and means for supplying can bodies and can heads simultaneously to the central and end portions of the segments.

LUBRICATOR.—No. 668,337. Feb. 19, 1901. Oscar Newhouse, San Francisco, Cal.

This invention is designed to be used in connection with lubricating devices for axles and shafts, and particularly for the use of heavy lubricants or grease, such as are not sufficiently liquid to flow. The lubricant is contained in a chamber and a cap is so disposed as to be removed with relation to the chamber, so that when advanced it will force the lubricant out.

MACHINE FOR DEGERMINATING WHEAT.—No. 668,287. Feb. 19, 1901. John Frey, San Miguel, Cal.

This apparatus is designed to scour and remove the germs from wheat and like grains. It includes contiguous smooth-surface metallic disks, one movable with relation to the other, and each having pockets or pits with sharp edges or angles into which the grain may fall, with one end projecting, and in this position the edges of the pockets of the other disk act to cut off the tips or ends of the grain containing the germ, and at the same time to scour and cleanse the grain.

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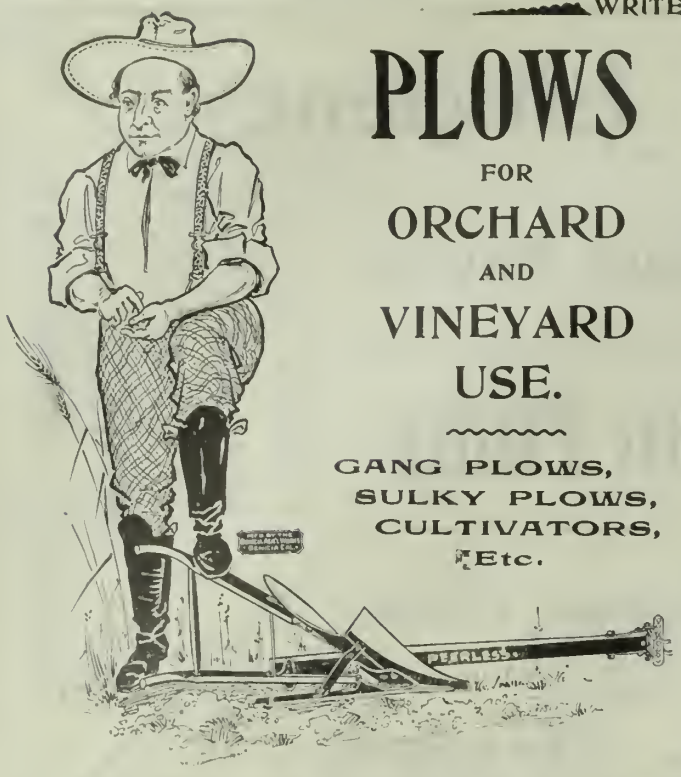

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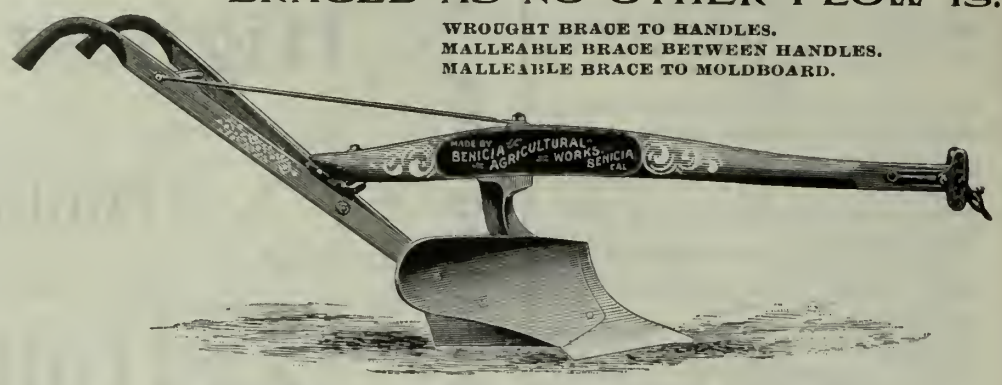

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All Features Combined in One Harrow.

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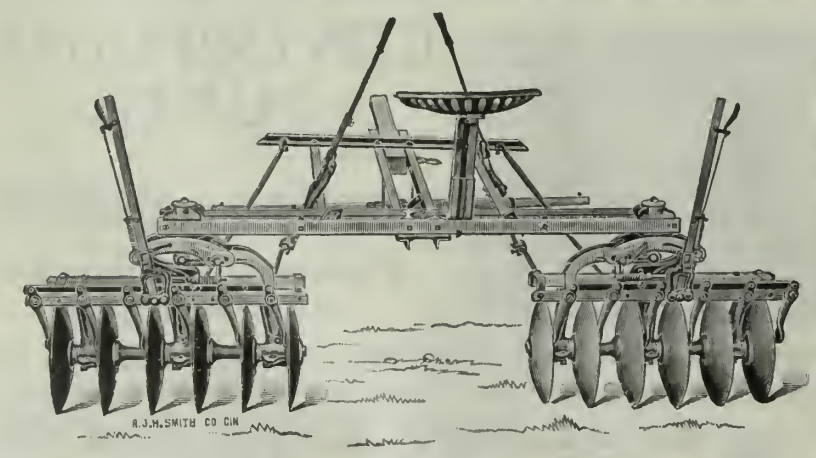

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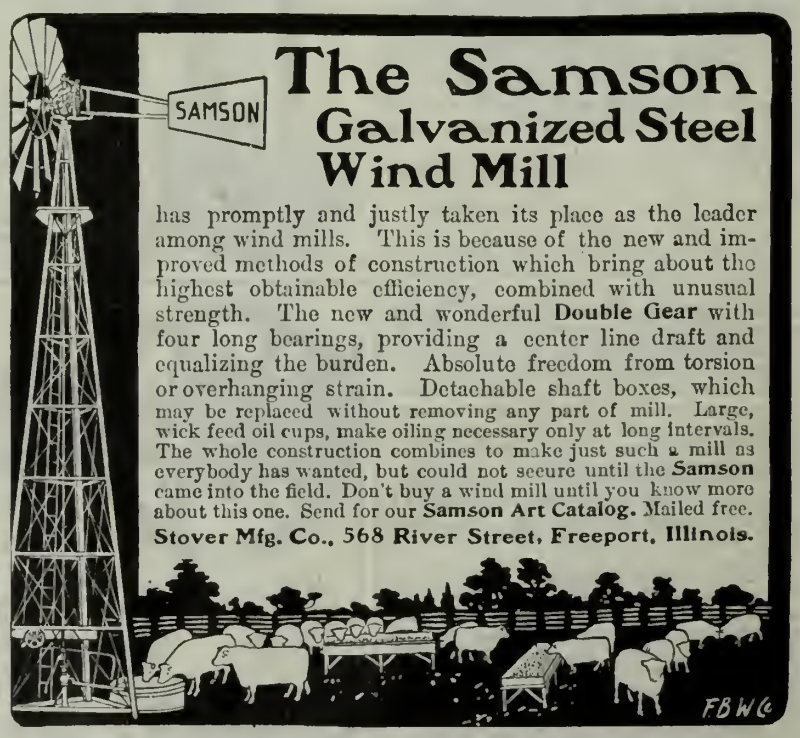

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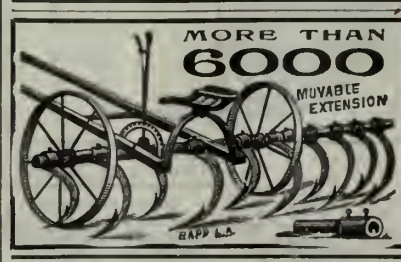

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sold in six years, giving the highest satisfaction For orchard, field or vineyard. Furrows, hills, weeds; works under trees, without side drafts One-horse convertible into 2, 3 or 4-horse machines. Strongest and lightest made. Illustrated Circulars.

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 11. SAN FRANCISCO, SATURDAY, MARCH 16, 1901. THIRTIETH YEAR Office, 330 Market St.

Southern California Scenes.

We have on this page two characteristic southern California winter scenes. One is a suburban view in the city of Pasadena, the beautiful city which has advanced from the fruit-growing colony of twenty years ago to municipal importance without losing its charm as a residence resort. In fact, it has an exquisite balance of rural and urban traits which has an irresistible charm for those seeking delightful homes. It is a place of elegant villas and grand hotels, but it has also the tasteful cottage feature well developed, while around it are warm slopes, broad benches and wide flats, upon which the higher agricultural and horticultural arts are profitably pursued. The picture shows the winter growth of the rose upon the verandas of a middle-class residence, and is widely representative of southern California homes and their adornment as well as true as a Pasadena portraiture. Pasadena now has a population of about 10,000, and is situated in the San Gabriel valley, about seven miles east of Los Angeles.

Another picture shows the leading horticultural interest of the San Gabriel valley—orange growing. A handsome pamphlet, just issued by the Los Angeles Chamber of Commerce, from which we take these pictures, alludes to the San Gabriel valley as perhaps the best known region of southern California. It has always been considered a choice section of Los Angeles county. Even before there was any "boom" worthy of mention, lands in the valley commanded a comparatively high price. As with most choice sections, the level-headed Mission fathers discovered its advantages, and founded the San Gabriel Mission, whose church is still in good preservation, in 1771. Now three railroads traverse the valley, and the land is rapidly being transformed into a succession of small homes and thriving little cities. The valley contains 100 square miles of territory. Under the shadow of the grand and precipitous Sierra Madre mountains, and separated from the lower plains by symmetrical foothills, the air is dry and bracing, proving beneficial to invalids who can not bear closer proximity to the ocean. The San Gabriel contains some of the choicest fruit land in southern California, and is largely devoted to the raising of oranges and lemons, as well as deciduous fruits. Besides Pasadena, other settlements in the valley are Alhambra, Monrovia, Duarte and Azusa, all of which are mainly supported by horticulture. East of the San Gabriel valley, and an extension of it, lies the Pomona valley, with its own series of prosperous fruit centers.

The section usually referred to as southern California includes the seven southern counties of the State, namely, Los Angeles, Orange, San Bernardino, Riverside, San Diego, Ventura and Santa Barbara. The area of this section is about equal to that of Pennsylvania, and nearly as large as England. The population in 1880 was 64,371, or 7½% of the population of the State. In 1890 it was 201,352, or 16⅔% of the population of the State. To-day it is 304,211, or more than 20% of the population of California. The growth of this section has, indeed, been most remarkable.

One of the most noteworthy features of the development of southern California during the past few years has been the utilization of an abundant subterranean water supply, which was not previously known to exist. It is estimated that during the past three years over 75,000 inches of water have been developed from underground sources—an amount sufficient to irrigate 500,000 acres of land.

Residence Scene in Pasadena, Los Angeles Co.

Orange Picking in the San Gabriel Valley.

Among the many resources of southern California, charming scenery will always hold high place. There are long stretches of valleys and mesas, rolling foothills, and higher up in the mountain ranges deep canyons, precipitous cliffs and pine-clad summits, where on the northern slopes snow lingers late into the spring. Within an area of 45,000 square miles may be found a wonderful variety of scenery and climate. Along the coast line, which extends for a distance of 275 miles, it is cool in summer, with a constant breeze from the broad Pacific. At a distance of from 20 to 30 miles from the ocean the breeze loses some of its power, but there is still sufficient to temper the summer heat. Farther inland, on the great plains of the Mojave and Colorado valleys, the sun rules throughout the year, and its rays in summer become somewhat too torrid for comfort, although, unlike Eastern weather, the nights are almost invariably pleasant and cool.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, March 16, 1901.

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The Week.

Everything is looking well. A good rain has followed the dry winds of last week, refreshed the upland grass and grain, and has brought the land into good plowing condition, both in orchard and summer-fallowed field. Fruit tree bloom is abundant and thus far is being safely displayed. Spring work of all kinds is well forward and the season's promise continues up to the best which the ancients can recall. The voice of the croakers is low; people are too busy and confident to give heed thereto.

This week the Saratoga people are holding their second blossom festival and the proposition to make the event annual is gaining favor. It is a good idea and could be adopted in many places with good results. We favor all movements to win wider recognition for the charms of rural life and wider appreciation of the public services of those who are developing the resources of the State by the extension and diversification of our industries. Whenever a locality manifests enterprise and confidence in itself all the people should rejoice.

It seems now to be settled that among the throngs coming to California this spring and summer President McKinley will be numbered. A dispatch from Washington gives an itinerary which seems to be practically chosen, and according to it the President will enter the State by the southern route and be received at Redlands on May 3. The next day he will come northward by the new coast route, stopping here and there and reaching San Francisco on May 7, to spend about six days in the bay region. His departure from the State will be via Sacramento and Shasta on May 14. There will evidently be a most marked welcome extended to the President all along his tour through California, and the State will be arrayed in her best verdure and exhibit her most winning floral decorations from end to end of the journey.

Spot wheat is unchanged and little doing, but still interesting things are happening. A full cargo of flour, 24,600 barrels, has gone for the United Kingdom—the first full flour cargo for some time. Three cargoes of wheat, about 10,000 tons, have also gone out. Wheat futures are a little higher as we go to press, but whether it is anything more than someone covering shorts does not yet appear. Barley is easy and unchanged; oats are also quiet and have slow movement with the same prices as last week. Corn is stationary with both stocks and demand light. Rye is falling through excessive offering. Little is doing in beans, though Limas are moving and some higher talk indulged in, though prices have not yet changed. Hay is slow and weak, except that some fancy is selling well. Millstuffs are quiet and unchanged. Beef is steady and mutton easier. Fine veal is firmer. Hogs are bringing full prices: more are coming from the East but not enough to burden the market. The best and poorest butter are both fairly steady but medium grades are weak. Cheese is selling freely at the recent decline. Eggs are firm at low figures—in fact some quotations seem unduly low. Buying in the country is active, and some country merchants are said to be guaranteed 12 cents net here without commission. All kinds of desirable poultry are firm, but turkeys and some broilers are weak. Potatoes are demoralized. There are heavy arrivals from the north and concessions in price are reported. Onions are weak. There is still a glut of poor oranges; few fancy are offered and they sell well. Choice lemons hold up well. Limes are arriving, but are still scarce and high. The Prune Association and other operators have taken all the outside prunes, and rate-cutting has stopped. The Association gives no hope of lower prices. Other dried fruits are unchanged, including raisins, except 3-crown, which are reduced for export. A few almonds are offering, but the demand is light. Walnuts are cleaned up. Wool is being bought in the country. Shearing has commenced in the valley; but no new wool has yet reached this market and no prices have been made here.

It is interesting to many that C. L. Marlatt, assistant chief of the Division of Entomology, United States Department of Agriculture, has passed through California on his way to Japan for a year's study of Japanese scale insects and saw flies. It is important to California that experts like Mr. Marlatt should study the injurious insects which are likely to be imported here from the Orient, and it will also be satisfactory to have the mystery of the San Jose scale cleared up, if Mr. Marlatt finds data for this demonstration.

Prof. Elwood Mead's lectures on irrigation at the State University are proceeding very satisfactorily. Prof. Mead presents striking data of the rights and wrongs of legislation affecting irrigation in the different States, and traces the effects thereof upon State development and progress. Dissemination of this information is of the highest importance, and it is very satisfactory that his lecture room is crowded at every session. The department of irrigation is to be developed at Berkeley along new lines, and is equipped with competent instructors in different branches. It is fitting that California should lead in this effort.

Vegetable drying is a good line of export work which should be encouraged, and surely Stockton is a good center for such enterprise. It is announced that a new desiccating plant will be built in that city, and that about 150 men and women will be employed at first, and this number may be increased later in the season. There is quite a demand for evaporated vegetables in Alaska and other places where fresh ones cannot be obtained, and good prices can be expected. The plant will be located near the railroad and wharves, and shipments can be made either way.

The wonderful advance in popularity of the California lemon is exciting the importers to lift their fruit, if possible, from under the discrimination now lodged against it. The New York Italian Chamber of Commerce has made arrangements by which a "strictly impartial and unbiased analysis" will be made of the lemons of California and those produced by Italy. By this analysis it is intended to show the relative merits of the two products as to the amount of citric acid contained, essential oil in the peel and durability. The committee is now awaiting a special shipment of Italian fruit, which, it is stated, will be compared with a selected quality of California lemons. This will suit California if representative samples are taken, and we presume the New York receivers of California lemons will look after that. We win on merit.

It is interesting to note, in view of the large wheat crop which we may gather this year, that old wheat in farmers' hands is less than formerly; also that there is no great holdback of corn, which must be taken into account. The March report of the statistician of the Department of Agriculture shows the amount of wheat remaining in farmers' hands on March 1 to have been about 128,100,000 bushels, or 24.5% of last year's crop, as compared with 158,100,000 bushels, or 29%, on hand March 1, 1900, and 198,000,000 bushels, or 29.3%, on hand March 1, 1899. The corn in farmers' hands is estimated at 776,200,000 bushels, or 36.9% of last year's crop, against 37.2% March 1, 1900, and 41.6% March 1, 1899.

The prune propaganda is assuming definite form, and there will be more done for a single fruit in a short time than has ever been done before in the world. If there is any pushableness about prunes they will soon show it. The Association directors have made a contract with a professor of the art of advertising to spend immediately $50,000 in exciting the whole country on the subject of prunes. Leading magazines will have prune pages and leading newspapers prune columns. Reading matter of the most seductive form, demonstrations of cookery, proclamation of hygienic properties—and many other appeals to the public—will be persistently made. One thing to be done, according to the professor of advertising, is to make the American people take the prune seriously, and not be everlastingly joking about it. The point is well made. We presume the people will soon come to believe that California is indeed earnest on the subject of prunes. The prune is to be carried into the primary schools, for the Southern Pacific will issue half a million copies of the prune primer in words of one syllable. It will be exceedingly interesting to see how the whole matter comes out. It will be a test of the efficiency of modern advertising methods, for they have as a foundation principle that if one has a good thing the more advertising the better the demand for it. The California prune is most assuredly a good thing, and it can be had at a low price. Now, let us see how far it will go. If it works with the prune, we have many other good things which can be pushed along the same lines.

At the session last week of the northern wool growers in Oregon the attendance was large, as six States were represented. The president in his address took strong ground against the leasing of the public lands, the exclusion of the sheep from the forest reserves, and demanded Federal legislation compelling manufacturers to brand plainly all goods in which shoddy is a constituent.

Stockton has done well towards a Pan-American exhibit. The recently organized Chamber of Commerce of over 600 members has taken up the proposition and proposes to make it the best display ever sent from San Joaquin county across the Rocky mountains. The local commercial body will act in conjunction with the State Board of Trade. Never in the history of Stockton has any attempt proved such a success as the new commercial body, and it is outlining elaborate plans for placing the advantages and resources of Stockton and San Joaquin county before the people of the East. This sort of work should be taken up by every city of the State.

There seems to be a chance that the raisin growers may call Mr. Kearney to the lead again. According to all accounts there was a very warm time at a preliminary meeting of growers held in Fresno on Monday of this week, called by Mr. Kearney to consider various amendments which he desired to have adopted at the coming annual meeting on the first Monday in April. In his address Mr. Kearney is said to have declared that the organization is on the verge of collapse. To this statement a very warm reply was made by T. C. White, a member of the board of directors. But the report is that Mr. Kearney succeeded in having all his amendments approved by the meeting, including one raising the salary of the president to $1000 a month, this being the issue on which he resigned last year. It is an open secret that Mr. Kearney is a candidate for the office.

In view of what we have repeatedly said of the importance of California figuring more largely in the cattle interests of the country, we are gratified that at the organization of the American Cattle Growers' Association at Denver last week a Californian, Mr. F. C. Lusk, was chosen president. The association declared in favor of leasing public lands to secure revenue for the development of forestry and irrigation, after being duly exhorted by Col. Irish of California in his most moving measures.

QUERIES AND REPLIES.

Canker Worms Which Won't Die.

To THE EDITOR:—We have canker worms which come out in the spring and destroy the leaves and eat into the small apricots and destroy the crop and strip the trees in spite of spraying with Paris green or other applications which we can make. It is reported that they can be killed by mixing arsenic and kerosene emulsion. What do you think of such a treatment?—FRUIT GROWER, Solano county.

Of course, you ought to begin to fight the canker worm in the late fall or early winter by banding the trees with paper, on which is spread a mixture of printers' ink and molasses, to catch the wingless moth as she is trying to climb up the tree to lay her eggs. Another way to do this is to use a 6-inch strip of No. 16 wire cloth placed around the tree so tightly that the moth cannot crawl under the upper edge—the lower edge being left away from the bark half an inch so she can get into the trap. In this catching of the female moth the battle is practically won.

But this is for next fall: it will not help when you have the eggs on the twigs and the worms hatching earlier than usual, as they are this year. The thing to do now is to poison the worms, placing poison on the leaves at once so the first bite will kill every worm. Good Paris green stirred into a paste with an equal amount of newly slaked lime, and then stirred into water at the rate of one pound of Paris green to 200 gallons of water, will kill the worms if well applied and the mixture is kept agitated while spraying to keep the Paris green from settling. The lime is essential to keep the free arsenic in the Paris green from burning the foliage, especially with the peach, which is very sensitive.

There is much trouble to get good Paris green, for much of it is abominably adulterated. This is so widely prevalent that the use of white arsenic is coming to be prevalent both for the codlin moth and for other larvæ, as well as the canker worm. Arsenic can be safely used if it is mixed according to the Kedzie formula, as follows:

Boil two pounds of white arsenic with eight pounds of sal soda in two gallons of water. Boil these materials together in any iron pot not used for other purposes; boil them fifteen minutes, or until the arsenic dissolves, leaving only a small, muddy sediment. Put the solution in a two-gallon jug and label "Poison, Stock Material for Spraying Mixture." The spraying mixture can be prepared whenever required, in the quantity needed at the time, by slacking two pounds of lime, and adding this to forty gallons of water; pour into this a pint of the stock arsenic solution; mix up, stirring thoroughly, and the spraying mixture is ready for use.

The combination of the above with kerosene emulsion may have an advantage in that some worms struck by the spray may be killed by contact and thus saved the trouble of eating the poison, while those which escape the kerosene will still have a chance to eat the arsenic. We have not seen this combination used, but theoretically it has the advantage of a double-barreled shotgun in bird shooting.

Mowing Lodged Wheat.

To THE EDITOR:—What is the best practice as to clipping wheat which has grown too fast and fallen down? We have a large area which is down and will not right itself; we have put on light mowers and are clipping the heads above the germ; and that we cut first stiffens up finely, but a good deal we may have to clip again. What is the result of clipping fallen grain, and is it desirable?—GRAIN GROWER, Puente, Los Angeles county.

Mowing grain which is growing too rankly, to prevent lodging, is an old and successful practice. Feeding off grain with sheep is also practiced to some extent. Mowing lodged grain to encourage a new and more upright start is also an old practice. These things are not done widely in California. In the first place, the cost of doing anything to a crop which is grown on a very small margin is discouraging; second, much grain, unless it is lodged very late in its growth, does struggle upward and throw a good many heads above the cutter bar, so that the crop is not all lost. Grain which is lodged very late in the season is hardly recoverable by any treatment. In most parts of the State grain which falls now will recover to a considerable extent. We presume if the spring moisture is adequate our correspondent's crop will be improved by the cutting he is doing. The cuttings will promote stooling, and, if there is time and moisture for these tillers to reach the light and make heads, the yield will be increased.

Work of a Mining Larva.

To THE EDITOR:—I send you a twig of peach tree showing some disease (?) in it. Will you kindly inform me through the columns of the paper what this is and as to the best spray for treating same?—READER, Lincoln.

The twig has irregular silvery markings on it extending lengthwise and a couple of inches or more in a place. The whitish or silvery appearance is caused by the outer layer of the bark (epidermis) which, being separated from the under layers, has died and become a mere thin tissue of colorless cells. The under layer of the bark has been eaten by some small mining larva—so called because it drifts along, being protected from birds or predacious insects by the epidermis above it. These insects either hatch from an egg thrust under this epidermis by the parent insect or they cut their way in as soon as hatched from an egg laid upon the surface. Sprays will not reach this larva because of the skin above them. They work until fully grown and then come out into the air as perfect insects or emerge to pupate on the outside. It is impossible from the vestiges to tell just what this insect is. The injury to the twig was probably done toward the close of last summer. Already healing of the tissue has taken place under the dried skin. Such injuries are seldom of much account because the insects are not numerous enough. Similar insect work is found on rose bushes and ornamental plants, but seldom extensive enough to attract attention.

California Nut Growing.

To THE EDITOR:—I have your book on California Fruits (1891) and am anxious to know if you have since published anything further in aid of nut growers. I am hoping to engage in the business in California in the future and desire all the information possible. If you have not yourself published anything, can you tell me of other publications. Your book is a mine of information, but I thought most of the experiments with nuts dated later than 1891.—A. M. A., Kansas City.

The third edition of California Fruits brings the subject of nut growing in California to the present time. Another publication which goes quite fully into details of California methods is "Nut Culture in the United States," by the Division of Pomology of the U. S. Dept. Agr., 1896. This was published in very small edition and we apprehend that it is not now to be had from first hands. B. M. Lelong, Secretary State Board of Horticulture, Sacramento, published in 1896 a handsome pamphlet on the "California Walnut Industry," which we presume can be had on application to him. Current matters on nut growing are freely discussed in the columns of the PACIFIC RURAL PRESS by practical growers and experts and readers are kept up to date along these interesting lines.

Bad, But Not to Fruit Trees.

To THE EDITOR:—I send a box of bugs which I found on a pear tree. There are three colonies of them, and about 100 bugs in a colony. What are they and are they beneficial to fruit growers?—F. L. MORRELL, Suisun.

The insects are hemiptera, which occur in large quantities on weeds and sometimes move to garden plants, but do not attack fruits nor fruit trees. They have simply huddled together on the pear trees to get out of the cold and wet. They are injurious in that they live on plants, but they seldom strike plants that are worth protecting.

Black-eye Beans in Fresno.

To THE EDITOR:—What are the chances here for a crop of Black-eye beans on red, sandy loam, with plenty of water for irrigation?—READER, Fresno.

The Black-eye bean has not yet been largely grown in the hotter parts of the interior valley. The chief commercial amounts of this variety have come from the low lands of the San Joaquin and Sacramento rivers and from Ventura county. In all these sections heat and drouth are moderated by ocean influences. We do not know to what extent this bean has shown adaptability to the more extreme interior conditions. We should like information on that point. In some places we know the plant blooms and fails to set during the hottest weather, but afterwards makes a crop in the early autumn. As we have stated on earlier occasions, the Pink bean seems to do best in the interior valley, but others may on fuller trial show suitability also.

Bleeding Vines.

To THE EDITOR:—We are delayed this spring in getting our Muscat grapes pruned, and those we are pruning now are bleeding freely. Will any appreciable damage or injury result to the vines from this bleeding?—C. D. H., Los Angeles county.

It has been shown by analyses that the first run of sap is almost all water. It is thinner than any later flow and inferentially of minor importance to the vine. It is some consolation that this is the case, but the pruning must be done in any event. In view of the reduction of the canes, it may possibly be of advantage to the vine to lose this water, thus reducing the pressure upon the few eyes which are ready to start, and escaping excessive break of suckers or other disturbance.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 11, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warm weather, with dry northerly winds, continued till near the close of the week, greatly benefiting grain and grass, and enabling farmers to resume work in the fields. This was followed by cooler weather on Saturday and rain Sunday, with heavy snow in the mountains. Summer-fallowing has commenced, and considerable work is being done in hop fields. Grain is in excellent condition, growing rapidly, and gives indications of a heavy yield. Alfalfa is making good growth, and pasturage was never better. Orchards and vineyards are looking well, and have not been injured by frost. Almonds, apricots, cherries and early peaches are in bloom.

COAST AND BAY SECTIONS.

The weather continued warm during the first of the week, becoming cooler toward the close, with light frosts in some localities, and showers on Sunday in nearly all sections. The soil had become quite dry, and the rain has doubtless been very beneficial, although crops were not suffering. Plowing and seeding are nearly completed. The grain acreage is much larger than usual, and prospects are good for heavy crops. Wheat and barley are in good condition and making rapid growth. In some sections grass and clover are ready for cutting. Nearly all varieties of deciduous fruit trees are in bloom, with indications of a heavy yield. Vineyards are looking well.

SAN JOAQUIN VALLEY.

Clear warm weather with a few foggy mornings prevailed during the first part of the week, while the latter part has been partly cloudy with drying north winds. These conditions have been favorable for the growth of grain and the rapid development of fruits. Plowing and pruning of orchards and vineyards are progressing, and trees and vines are looking thrifty. Grain, grass and alfalfa are making rapid growth and in excellent condition. Apricots, peaches, nectarines and some plums are in bloom, and the buds on apples, pears and cherries are swelling and will soon open. No frosts are reported. Green feed is plentiful. Ditches are full of water.

SOUTHERN CALIFORNIA.

Warm weather has continued during most of the week, with fogs in the morning in some places. Light rain has fallen in nearly all sections. The soil had become very dry, and orchards and grain were showing a lack of moisture, but it is believed the showers on Sunday were sufficient to revive vegetation and soften the soil for late plowing. Grain is still looking well, and if conditions continue favorable there will be a good yield. Oranges are maturing very rapidly. Deciduous fruit trees are in good condition.

LOS ANGELES SUMMARY.—Timely rain Sunday night greatly benefited growing crops and orchards. Some early grain heading. White sage is in bloom; honey crop is expected to be large.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 13, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	2.08	40 81	42 58	33 37	44	62
Red Bluff	.12	22 84	18.68	19 98	40	74
Sa ramento	.48	16 58	15 44	15.50	42	74
San Francisco	.75	18 79	17.02	18 15	46	66
Fresno	.34	10 28	7.04	6.97	40	74
Independence	.04	5.70	2.19	4 41	28	74
San Luis Obispo	.58	27 62	14.70	14 83	36	86
Los Angeles	.44	14 05	5 56	13 92	42	68
San Diego	.08	8.61	3.13	7.86	48	68
Yuma	.00	3.60	.76	2.66	42	88

HORTICULTURE.

The Cultivated Guavas and Their Botanical Differences.

By JOSEPH BURTT DAVY, Assistant Botanist U. C. Agricultural Experiment Station.

In view of the increasing interest in the cultivation of guavas which has recently been shown in southern California, it has seemed expedient to prepare and publish a brief account of the genus, with a key to the species already introduced, by which they may be distinguished from one another.

The guavas belong to the genus Psidium (named from the Greek word Psidion, a pomegranate), and the order Myrtaceæ (myrtle family), which also includes the well-known genera Eucalyptus, Myrtus, Callistemon, Calothamnus, Leptospermum, Angophora, Tristania and Eugenia, and produces such useful articles of food as the clove, allspice, Brazil-nut, rose apple, jambolan and the various kinds of guava.

The genus Psidium includes about 130 species of trees and shrubs indigenous to tropical and sub-tropical America. Some species are now also found wild in tropical Asia and South Africa, having been introduced and become naturalized. The genus is distinguished by the following characters:

Lvs., opposite, petiolate, penniveined; fls., rather large, white, cymose on axillary or lateral one to three- (rarely many) flowered peduncles; calyx lobes, four or five; petals, four or five, spreading; berries, globose, ovoid or pear-shaped, usually with a roughish skin and often crowned with the calyx limb; seeds, sub-reniform, hard.

Propagation is usually effected by cuttings of the young shoots which are getting a little firm at their base, inserted in sand under glass, with bottom heat. In planting out, care should be taken to provide perfect drainage, as the plants dislike stagnant water.

KEY TO THE SPECIES IN CULTIVATION.

A. Branchlets 4-angled.

1. Psidium Guajava, L. (Synonyms P. pomiferum, L., P. Guava, Raddi.) Lemon guava: A shrub or small tree, 6 to 15 feet high; lvs., oval to oblong-lanceolate, bluntish, chartaceous, glabrous above, puberulent below; peduncles, 3- to many-flowered, pubescent; fruit, globose, yellow, aromatic, somewhat astringent; flowering June.

Native of Mexico, West Indies and South America. Grown extensively in southern California and valued for jellies and preserves; several horticultural varieties are offered by nurserymen.

Var. sapidissimum, Jacq., has fruit similar to that of the typical plant, but the peduncles are only 1-flowered.

Var. pyriferum (Synonyms P. pyriferum, L., P. pyriforme, Griseb.) Common guava: Small tree; lvs., acute; peduncles, 1-flowered; frt., small, pear-shaped, smooth-skinned, yellowish when ripe, aromatic, sweet and pleasant to the taste; fls., May–July; frt., July–November. It has been figured in the Botanical Register, pl. 1079. This is the source of the well-known guava jelly of the West Indies; the fresh fruit is also edible, and is said to be most agreeable if gathered in the early morning; it is then more pleasantly acid than when gathered later in the day. When deprived of the small, stony seeds, the fresh fruit makes excellent tarts.

A.A. Branchlets compressed-cylindrical.

2. P. polycarpum. Prolific guava: Shrub 3 feet high; branchlets, pubescent; lvs., elliptical or oval-oblong, chartaceous, puberulent beneath; primary veins costate, prominent beneath, the secondary ones reticulated and transverse; peduncles usually 3-flowered; flowering May; figured in the Botanical Register, pl. 653.

Native of Trinidad. Said to be superior to the Lemon guava in flavor and to be second only to the Strawberry guava.

A.A.A. Branchlets terete.

3. P. Araca, Raddi. Brazil guava: Shrub 4 to 6 feet high, branchlets hirsute; lvs., oval or oblong, obtuse; above, sub-velutinous to the touch; beneath, pubescently sub-hirsute; veins, reticulate, somewhat raised; peduncles, axillary, 1- to 3-flowered; frt., ovoid, greenish-yellow; flesh, white. This species has recently been introduced by Dr. Franceschi of Santa Barbara, and is offered by him with the recommendation: "Said to be one of the very best guavas."

4. P. Guineense, Swartz. Guiana guava. Shrub 8 to 10 feet high; branchlets, pubescent-villous; lvs., ovate, glabrous above, petioles and under side rusty-tomentose; peduncles, 1- to 3-flowered; frt., subrotund, puberulent, deep yellow without; flesh, red, said to possess an exquisite flavor.

5. P. Cattleianum, Sabine. Strawberry guava: Shrub or small tree 10 to 20 feet high; branchlets, glabrous; lvs., obovate, coriaceous, glabrous; peduncles, solitary, axillary, opposite, 1-flowered, scarcely equaling the petioles; frt., nearly spherical, fine deep claret color, its skin tough, foveolate, resembling that of a ripe fig but thinner; pulp, fleshy, soft and juicy, purplish-red next the skin, but white at center, with a strawberry-like fragrance and flavor, whence the popular name; flowering May.

Native of Brazil. Figured in the Botanical Register, pl. 622; Curtis' Botanical Magazine, pl. 2501, and Nicholson's Dictionary of Gardening, Vol. 3, p. 238. Extensively cultivated in southern California; hardy in sheltered places out of doors near San Francisco and doubtless far northward in the interior valleys.

Var. lucidum (synonym P. lucidum, Hort.), the Yellow Strawberry guava, has a larger, yellow fruit, said to have a better flavor than that of the purple-fruited form. Reported as extensively grown in Florida; introduced into southern California by Franceschi.

SPECIES INSUFFICIENTLY KNOWN.—P. Guayavillas, Hort.; "Brazil; a distinct-looking species, said to have smaller fruit than P. Guajava, but of superior taste." Another species recently introduced by Dr. Franceschi. This may be the same as the P. Cujavillas, Burm., which has been considered merely a variety of P. Guajava.

P. Sinense, recently introduced by Mr. Swingle, Agricultural Explorer for the U. S. Department of Agriculture, has not yet been seen by us. As it is believed there are no species indigenous to the Asiatic continent, it may be that this is a newly developed race of P. Guajava, of Chinese origin.

P. Thea, Griseb., of Argentina, another of Mr. Swingle's recent introductions, has not yet been seen by us, and the published description is not accessible.

Berkeley, March 10.

Good Trees, Vines and Plants for Hot, Dry Places.

Over considerable area of California the lessons of tree and plant growth in Arizona will be suggestive. R. H. Forbes, director of the experiment station at Tucson, has just prepared a lesson sheet along this line. He says that it is often a perplexing matter to beautify a southern Arizona home with its appropriate setting of green. The wide daily and yearly range of temperature makes the number of available trees and plants much less than in the more even climate of southern California; while the aridity of the air and the scarcity of water makes drouth-resisting forms to be preferred.

The experience of several years past on the university grounds at Tucson has shown some especially suitable things for an arid mesa underlaid with the limy hardpan commonly known as caliche.

TREES.—Among trees the pepper tree stands not far from first for such a situation, being a graceful evergreen, a rapid grower and thriving on relatively little water. This tree, sweeping the ground with its lower branches, may serve admirably as a screen, but may also be trimmed up into a taller and more shapely form. The Arizona ash is a slow grower, but never sulks; prospering when water is abundant, maintaining life and waiting for its opportunity when water is scarce. The Bagote, a species of Palo Verde, is an attractive oddity, evergreen, graceful and covered with a wealth of yellow blossoms for three weeks in the spring. One tree on the university grounds has thriven for three years past without irrigation, but is slightly damaged by our coldest winter weather, say, 20° F. The date palm is highly ornamental, and, when well watered, takes strong hold on rocky soils. When ornament alone is considered, however, Phœnix canarienses, closely resembling the date palm, is perhaps preferable. It is a more vigorous grower and does not put forth the troublesome growth of suckers which must be removed from the date. The native cottonwood, too, though it has its enemies, is an excellent thing to plant—next year. This year you should watch the trees in your neighborhood and mark the males—those which produce no cotton. Switches from this source will produce clean trees free from the annoying nuisance of cotton. Perhaps the handsomest trees on the university grounds are three cottonwoods, about nine years old, but 50 feet high and with trunks 16 to 20 inches in diameter. All of these trees will force sufficient root room for themselves in caliche, if properly irrigated.

The olive, the umbrella tree and the Washingtonia palm are less hardy in the hardpan soil of our location, being occasionally subject to a destructive root knot where, apparently, the health of the tree is impaired by adverse conditions. In most cases it is desirable to prepare root room in a hardpan soil by blasting, as a growing tree will otherwise be soon cramped for room. When caliche is found within 2 or 3 feet, it is well to drill 3 or 4 feet farther and shake things up with a stick of No. 2 giant on top of a large handful of black powder.

HEDGES.—The pomegranate takes vigorous hold of rocky ground, as does also the California privet (Ligustrum), but both require attention with regard to water in the hot season. The privet is especially beautiful for this purpose—evergreen, vigorous and easily propagated by cuttings from the established plants.

VINES.—On a south exposure the trumpet creeper thrives, yielding a mass of green foliage and orange-red blossoms in summer, but rather bare and unsightly in winter. The Virginia creeper will also endure our summers, but its near relative, Amelopsis Veitchii, is a handsomer and cleaner vine, with an ivy-like leaf. Amelopsis Veitchii does best in shady places. The honeysuckle (Lonicera Japonica) also thrives on south exposures, as does the English ivy in sheltered places, but the latter is perhaps less adapted to this climate even when protected from the heat.

LAWN PLANTS.—Bermuda grass, perhaps, leads the list as a summer grower and drouth resister. Its harsh texture and the difficulty of killing it, however, do not make it many friends. Alfalfa makes a beautiful summer green, stands prolonged drouth when once established, and will force its roots deeply into hardpan soil, thus preparing them for subsequent planting. "Sour" clover (yellow sweet clover, bitter melilot) fulfills the same purpose, but grows in winter. A very promising plant for lawns in this section is Lippia repens, a near relative of heliotrope and verbena. This plant is a rapid grower, matting closely to the ground and speading much like a strawberry plant, striking root from the joints as it runs. It is evergreen, full of bloom in summer, is a drouth resister, prospers best in the hottest places, and stands the frosts of this locality fairly well. The lawn of the future, however, is doubtless to be composed of native grasses. In the most interesting struggle for existence between two or three score grasses and clovers on the University lawns the natives are making an excellent showing, being decisively conquered by Bermuda only. But more of this, perhaps, another year.

Where water is scarce or costly, or where a home is abandoned during the hot summer season, a selection of drouth resisters may be made which will beautify barren surroundings with minimum cost and care. The pepper tree, the Arizona ash, and the Bagote, the native Larrea or creosote bush, agaves and yuccas, native grapes and honeysuckles, native grasses, and possibly, also, Lippia repens for lawns, is a selection which will go far in the reclamation of barren surroundings.

But beware of the traveling agent who wishes to sell you an ornamental foreign tree that "will grow without water." The chances are against the purchaser, and such selections can be made far more safely from native trees.

Frost Prevention by Coal Baskets.

J. H. Reed of Riverside read a paper at the last meeting of the Horticultural Club on the Feasibility of Frost Prevention, in which he reviewed in an interesting manner the demonstrations secured by the Riverside growers, all of which have been set forth in earlier issues of the PACIFIC RURAL PRESS. As, however, it is coming frost time with decidious fruits it is important to cite the following: The laws of damaging cold currents were studied and largely determined. The effect of windbreaks and other obstructions of the movements of these currents were carefully noted; the knowledge gained was found valuable in all efforts to control them. It was demonstrated that running water modified the temperature to some degree, also that smudge from burning wet straw and similar material was effective where the temperature was liable to go but little below the danger point.

But by far the most important of the facts determined, so far as practical results are concerned, was that dry heat could be made to raise the temperature, or at least to maintain a temperature from 6° to 9° higher than the surrounding normal temperature. A margin greater than we often have to overcome to protect our fruit. This has been corroborated by actual and extensive use of the coal baskets, as well as by burning wood, as is done in Florida. Hence our claim of the possibility of protecting citrus fruit from frost damage in southern California, where citrus fruits have any business to be planted. We insist that this is no longer a matter of opinion, but a fact established by extended, actual experience.

EXPERIENCE AT SANTA PAULA.—In the course of his essay Mr. Reed introduced the following letter from C. C. Teague of Santa Paula, Ventura county:

Our experience with coal baskets as a means of preventing injury by frost is highly satisfactory. We have several lines of thermometers, which are placed at intervals across the cold portion of our ranch, and have carefully kept a record of the temperature of each portion of the ranch. The thermometers for this purpose are numbered. We kept this record throughout last winter, and also this winter, up to the present time. A portion of the cold area on our ranch is set to walnuts, and we, therefore, have had no coal baskets in this part, but we have a careful record of temperature, as before stated, in this portion of the orchard, as well as in the portion that is set to citrus trees, and which is protected by coal baskets. So you see we know exactly the relative coldness of the different parts of the ranch. During the recent cold weather, we demonstrated that we could raise the temperature 8°, or perhaps to be more accurate, could prevent it from falling, by lighting our baskets. We have about forty baskets to the acre, which are distributed throughout the cold area in such a way that we could light either one-quarter, one-half, three-quarters or the whole, and yet have the area lighted equally distributed. Our object in thus placing them was in case it became necessary to only light a portion of the baskets, we could do so, and still have the heat evenly distributed. For example, should the temperature at 12

o'clock be about 30°, we could reasonably except that before daylight the temperature would be extremely dangerous, so we would light one-quarter of the baskets, reserving our best protection for the period that would be most dangerous. If the temperature still continued to fall, we would probably light another quarter of the baskets; and if we found it absolutely necessary, when it reached a time when we were obsolutely certain that the baskets would burn until morning, we would light the other half. In the plan outlined above, we would get what protection we could safely spare in the early part of the night and keep our best protection until a time when it would be most needed. The baskets when well filled with coal will burn and give a good heat for about five hours. It takes about ten pounds of coal for each basket.

We found that when the time came when we had to light the baskets that we had magnified the labor necessary to light the baskets. We had ample time, as portions of our orchard (and it would be probably true of most orchards) are colder than others, and by beginning on the low ground first, we had ample time to keep ahead of the drop in temperature. We have, in all, about 5000 coal baskets distributed as before stated, and I have every confidence that we can go through a lower temperature than 20° without injury. In fact, we have done so this year, as the thermometer on the low lands, where the temperature is relatively about the same as some parts where we lighted baskets, registered 20°. Of course, it did not get that low in the orchards where we were firing, but undoubtedly would have done so had there been no fires going. As is was, we raised the temperature in the cold portion which I speak of, up to above 30, and kept it there, showing conclusively that we were raising the temperture from 8° to 10.

I do not think that the same results, by any means, could be attained by small growers, as undoubtedly there is a greatly increased benefit by firing a large area, but I see no reason why many of our thickly settled citrus regions could not attain fully as good, if not better results by intelligent, co-operative firing. I am not able at this time to give you satisfactory answer to your questions regarding the amount of time and labor necessary to light the baskets. We have a large force of men on our ranch, and on the night that we fire up. About twenty of them were on duty, and as we followed the method of firing given above they were busy only a small portion of the time. One-quarter of the baskets were lighted at about 12 o'clock, and at 3 o'clock, when we were certain the baskets would burn and give a good heat until morning, we lighted an additional half, making three-quarters in all, and with the results above stated. We are thoroughly of the opinion that with porper preparation, and careful management, the dangerous temperatures could be successfully combatted in almost all the citrus growing sections of southern California.

Peaches in the San Joaquin.

At a recent Farmers' Institute at Fresno there was a discussion on peach growing, which the San Joaquin Valley Farmer reports went against the Muir peach forcibly. It says: The demand for Muir peach stock for the past two or three years has had no precedent in this State for many years, and has greatly exceeded the supply—fortunately, it would seem, in the interest of fruit growers. Local nurserymen were sold out of Muir stock during the first week of this season, and still the demand has kept up, in face of the warnings from nurserymen and the agricultural press of the State.

The Muir peach, it was decided, had little to recommend it and many objectionable features. The most serious one was the fact that there are many bearing orchards of Muir peaches in the county already, and, since they nearly all ripen about the same time, it was next to impossible to get help to handle the crop. It is a slow grower and its early crops do not compare in quantity with other varieties. The Lovell and Elberta were considered far superior to the Muir as money makers, the fruit ripening at a much better time for handling than the Muir and yielding larger returns, with a far greater promise of a longer life than the Muir. The Lovell received the strongest endorsement, and very justly so, too. It is the very best peach, perhaps, among our many good varieties, as a dryer, canner and shipper. The tree has a fine, strong growth and habit. It bears heavily and carries the fruit well—much better than the Muir. For drying it is close to the Muir in weight of dried fruit per pound of fresh, and makes a finer dried fruit. It is one of the best for canning of all the freestone peaches. For shipping it has hardly an superior.

In the department of cling peaches the Phillips easily took first place in the discussion. It was stated that when the average peach, last year, was bringing from $17 to $20 per ton at the canneries the Phillips was eagerly sought for at a much higher price in the Fresno market, while at the Visalia cannery it readily brought $30. Moreover, the Visalia institution has given out that it guarantees $25 a ton for Phillips cling during the next ten years. White peaches were discouraged.

THE FIELD.

Growing Peas for Stock Feeding.

J. R. Shepard of Zena, Or., gives the Agriculturist an outline of his experience in pea growing, which will be found instructive this side of the State line. I cannot understand, he says, why Willamette valley farmers have not learned the value of the field pea for fattening stock. Many years ago—thirty or forty, I believe—there were many peas raised and splendid results obtained. Forty bushels per acre was not very uncommon, I am told, on French Prairie and elsewhere. Now it is rare to find a field of even a few acres. Perhaps the pea weevil made its advent and frightened them, as it did over 150 years ago in Pennsylvania and New Jersey, or, perhaps, dollar-wheat was more attractive. But the pea weevil is no longer to be dreaded nor dollar-wheat to be feared, and we will see, no doubt, a revival of the industry.

My experience is limited to three or four crops, and is in no way unique, for every person I have talked with who has ever raised peas declare them to be the best thing you can raise if you are in stock, particularly swine. Especially do Canadian and European farmers endorse them.

Variety and Yield.—I am raising the Canadian field pea. I doubt if there is a better; but hope to carefully compare it, row for row, with the Blue Prussian and Blackeyed Marrowfat. Both of these are said to be excellent.

I think twenty-six bushels per acre, with favorable conditions and intelligent tillage, etc., a moderate yield. The average for past three crops with us—Ira Burley, my predecessor in this branch, and myself—has been just about thirty bushels per acre. Last year my wheat yielded four bushels on summer-fallowed, and my peas thirty-five bushels on stubble land. This was not on a quarter-acre corner of extra rich land, but an ordinary twenty-seven-acre field formerly in wheat.

Compared With Wheat.—Peas are profitable for fattening hogs and wheat unprofitable. No man can profitably raise wheat in this valley and feed it to hogs. There are farmers who think they can, but I believe they are mistaken. It now takes two years to get twenty or twenty-five bushels of wheat per acre, and the land is impoverished correspondingly. On the same land we can get as many bushels of peas every year, and the land benefited, for the pea is a leguminous plant and gathers nitrogen from the atmosphere, while the soil is loosened by the roots—at least, in my experience. A bushel of peas weighs the same as one of wheat, is more easily digested, and the hog thrives and fattens very much more satisfactorily. The pea crop tends to clean the land of weeds. The land can be plowed early in the fall before the rains come, while wheat land can not. This is my experience, and it may not in all cases prove as satisfactory as I have found it.

Tillage.—Plow early, to allow land to be benefited by winter rains and frosts and to remove the temptation to pasture it through the wet weather. Plow deep. Cultivate well as early in the spring as condition of soil permits. Sow from March 15 to April 15 [and at many other times of the year in California.—Ed.] Cover 2 to 4 inches deep. I use a disc drill and think it gets them in in better shape than anything else. Some use a plow for small patches.

If sown alone, use 2½ bushels per acre. They never send up more than one stalk, and, the seed being large, a liberal seeding is necessary. I do not sow anything with them, but many mix oats.

The Canadian grows 3 to 4 feet and will fall when ripening in the direction induced by prevailing winds. I mow them when ripe, cutting one way only, and follow mower with a fork, to remove from path of mower for next swath. By leaving them in windrows, they are ready to be loaded and hauled to the thresher. Remove all concave teeth, and have your engineer slow down. Use ordinary oat or barley riddle.

I aim to have several small patches of from one to five acres, which I have my hogs harvest. Sow these successively. It is poor economy to turn them in before the peas are very nearly or quite ripe. Unlike wheat, none are wasted, as the size and color enable the hogs to find them all. Thus you will have a lot of fat hogs in August and September. I have been highly gratified at the results obtained from this system.

The Pea Weevil.—The egg is laid upon the pod where it is nearly grown, and the larva penetrates to the pea within, where it develops into the adult beetle by October 1st. By February 1st it has clipped the thin hull that hid it, and when the warm days of spring comes it is ready for business. It is a common error to suppose that it does not injure the seed. I have experimented to my entire satisfaction. Many peas with the tell-tale hole will germinate, but, being deficient in plant food, will be weakly and nonproductive. Twenty-five per cent of the peas were infested in the crop of 1899, but owing, as I believe, to the prolonged rains that season while they remained cut but unthreshed, the weevils were killed in the larva or pupa state. Hence, not one pea in a thousand had a hole in it last spring, and only 2% or 3% of last season's crop was infested. I therefore reason that, if killed in the larva state immediately after threshing, the succeeding crop will be comparatively free. We have a great advantage, I think, over many sections, in that the beetle remains in the pea until spring in our climate, and can be easily killed. The Department of Agriculture recommends fumigating in a tight bin, by placing one ounce bisulphide of carbon to 100 pounds of seed. I have tested this, placing two ounces in the top of a forty-gallon barrel of peas. It works. Close the barrel air-tight and the fumes settle, being heavier than air.

As a forage plant for dairy cows the field pea is highly recommended by George W. Weeks, yielding prodigiously and being rich in food value. For this purpose it is cut green and fed at a season when other green feed is scarce.

European and Native Lupins.

To the Editor:—Your correspondent from Napa asks some information about the European lupin, and as I experimented with the plant a little, I will give my experience for what it is worth.

In October, 1899, Prof. Hilgard sent me, on my request, one pound of the seed of the large blue European lupin. I sowed the seeds in November of the same year, after the first rains had made the ground fit for plowing, throwing it broadcast, but taking care that two seeds did not drop in the same place, or even too close to each other. The soil was of the very best, free from trees and not sown to any crop the year before.

The night after planting about half an inch of rain fell; so that the seeds sprouted right away and kept on growing, till some attained a height of 2½ feet. A little after blooming time, however, a majority of them began to look sickly, some lost all their leaves, and the whole was a rather sorry looking lot, except a few that had been watered by the overflow of an irrigation ditch. When the time of harvesting came I harvested five pounds of seeds, that were much inferior in quality than the seeds I had sown, being about half their size and containing many sterile ones. The roots were very sparingly provided with the tubercles that give the plant its power to draw nitrogen from the atmosphere.

By chance, on that same field, there sprouted three seeds of the blue native lupin, and, while pulling out other weeds, I left them standing, so as to get a fair comparison between the two different kinds.

The native lupin attained the same height as the European kind, and, sending its lateral branches in every direction, covered much more ground; it bloomed at exactly the same time, gave its seeds back fifty times, and its root was hardly visible, on account of the knots with which it was covered. At no time did it show a disposition to wither till after it had done its duty. Examining some of the plants that had come up in my orchard, there was everywhere the same result—luxuriant foliage, knotty roots, healthy appearance.

A friend of mine sowed his pound of seed among his trees on rather good soil; by the time that he plowed his orchard in the spring most of the plants had perished, and none were more than a few inches high.

Taking two plants of this year's growth of the same height—10 inches—I find that the native lupin weighs two ounces, while the European kind weighs only half an ounce.

Comparing again the points of the two different specimens, I come to the following conclusion:

1. That the European lupin requires irrigation while the native lupin does not.
2. That the root of the native lupin is better supplied with means to absorb nitrogen from the air than her European sister.
3. That both bloom and mature their seed at exactly the same time.
4. That one pound of seed of the native lupin will cover more ground than that of the foreign kind, on account of the spreading habit of the former and the smallness of the seeds.
5. That the native plant will produce a greater weight of green manure than the European kind.
6. That the European lupin will not thrive in poor soil.

H. A. Beekhuis.

Campbell, Santa Clara county.

This is very interesting. The effort to secure a variety more disposed to grow in the winter than the native lupins is what led to the introduction of the European kinds. The native lupins like to grow in the spring, but that is too late for plowing under in orchard. Our correspondent does not definitely state his observation on this point. Blooming and maturing seed are not the chief points in view for green manuring. Does our correspondent find that the native grows as well as the European during the fall and early winter?

Agricultural Review.

ALAMEDA.

LIVERMORE CREAMERY SUCCESSFUL.—Livermore Herald: With the 1st of March the Livermore creamery finished the first year with M. Y. Smith as proprietor. The books show a satisfactory record for the opening year of the creamery, after a long period of inactivity, and Mr. Smith starts his second year confident of a far better showing. The receipts of milk per day now are over a thousand pounds more than on the corresponding date last year.

BUTTE.

PROFIT IN ORANGES.—Chico Record: A fitting illustration of the profit in a well tilled orange grove comes from Thermalito, where the Oroville Citrus Association owns eighty acres, sixty of which are in bearing. The cost of bringing this princely property up to its present state of perfection necessitated an expense of $29,000. A fine system of irrigation and drainage was inaugurated at the time of planting, and the trees did remarkably well in consequence. The value of the grove is now held by the owners to be $80,000. The profits the past season paid 12% on that amount.

KILLED IN A PECULIAR MANNER.—Chico, March 10: Hugh Turner, a young farmer of Nord, in this county, was killed last evening in a peculiar manner. He had been driving a disc harrow near Nord and failed to return to his farmhouse. The men who were sent to look for him found him lying across the tongue of the harrow with his left leg under the machine. He had evidently fallen and just as the sharp disc passed over the calf of the leg his team stopped. The sharp wheel had almost severed the leg and the heavy machinery held the man until he bled to death. Turner had been dead for several hours when he was found and his body presented evidence of the torture he suffered before death relieved him. The team had not moved while the man was dying.

COLUSA.

HOW TO TRIM WALNUT TREES.—Colusa Sun: We may have become cranky on the walnut question, but there is so much going to waste around this town that we cannot help mentioning the subject once in a while. Every black walnut tree, properly treated, is worth $20 or more; but right now they should be cut back, so as to be ready for grafting next February. Do not go up in the top and trim, but cut the trunk of the tree off not over 6 or 7 feet from the ground. There is not the ghost of a chance of killing one. After they are cut off they will this summer sprout out on top of the stump, and these sprouts can be grafted next winter. In five years there will be a revenue from each tree that will astonish you. If the tree is not cut back pretty soon, another year will be lost.

SALES ON THE GLENN RANCH.—Colusa Sun, March 6: There were filed Tuesday eight sales on the Glenn ranch, as follows: C. H. Nensan, 113.43 acres; Nelson Butler, 23.75; D. C. Biglow and J. N. Logan, 91: G. M. Hanson and N. W. Hanson, 79; J. D. Doner, 160; Nelson Butler, 58.33; Charles E. Beck, 78.90; D. A. Shellooe, 640. Here we have nine purchasers, all of small tracts, except one of a whole section. This is a good indication of the breaking up of the great Glenn ranch and a building up of small homes. Those who desire to get into a good neighborhood where land can be had at reasonable rates, need not now hesitate about going on the Glenn tract.

THE PRUNES ROTTED.—Colusa Herald: The late D. H. Arnold housed about $1000 worth of undried prunes on trays in old Armory Hall last fall. The lot was inspected this week and found to be completely ruined on account of rot. The whole lot is being hauled out and fed to hogs.

FRESNO.

ALFALFA FOR CATTLE.—Fresno Republican: Alfalfa is the stuff. The handwriting is on the wall. The man who can sell beef will have buyers at his door. The great Western ranges have been hurt—perhaps irretrievably—and the condition of the cattle industry in this country is such that, unless more forage is grown, the poor man will be fortunate if he has meat on his table three times in the week. In 1890 there were in this country 589 head to every 1000 inhabitants. In 1900 there were only 375. There will be no such thing as over-production of beef cattle in the United States, if stuff can be produced to feed them on. Alfalfa is the stuff.

GLENN.

EARLY HAYING. — Chico Enterprise, March 4: Tim Reidy, who came over from Willows Saturday evening, informs us that a farmer of that section had last week prepared for hay cutting, and that he was intending to commence work this morning. Mr. Reidy says that a great deal of the barley around Willows has already headed out.

VERY EARLY BARLEY.—Orland Register: Briggs Flack, a prominent rancher of Germantown, brought from his place a few days ago a bunch of barley standing about 30 inches high, with heads fully developed. The specimen was raised on Mr. Flack's place, being a portion of his summer-fallow crop.

KINGS.

BEE MEETING.—Hanford Sentinel, March 7: The Central California Bee Keepers' Association met last Wednesday at Brown's grocery store for the purpose of making any arrangements necessary for the enhancement of the bee raising business for the coming season. There was a large attendance of bee men and more enthusiasm was manifest than there has been for many years before. There was a general spirit shown that it was desirable among the different members to co-operate with the best interests in the bee line in the State and to pull together in the general work of honey production. The present manager, Fred Brown, was reappointed to look after the buying and selling for the association for the coming season and Fred Hart was recommended for the position of foul brood inspector, which position he has previously held. After resolutions were adoped to keep in close touch with the bee raisers of Colorado, Nevada, Utah and Arizona, the meeting adjourned to meet again in a few months.

MENDOCINO.

GOOD PRICE FOR TIMBER.—Mendocino Beacon: An important deal in redwood timber land was transacted in Mendocino this week. The tract owned by the Kaisen brothers and situated about 7 miles from here on the Ukiah road was sold to W. B. Coombs of Little River for $13,500, or at a price exceeding $30 per acre. This sale is the most important transaction in redwood that has taken place in this section for a long time, and the price per acre probably exceeds anything ever paid in this locality for a tract of its size. The timber is of excellent quality.

MONTEREY.

DECREASE IN SUGAR BEET ACREAGE.—Monterey New Era: There will be very few sugar beets — practically none—planted in the Carmel valley this year. The farmers did not find them as profitable as other produce, owing to the lack of railroad facilities. Last year about 1500 tons of sugar beets were grown there. The farmers say that if, as was proposed last year, the railroad should be extended along the coast from Lake Majella into the valley, beet raising would pay well. It would not cost much to build it, and great quantities of wood, tanbark, potatoes, fruit, hay, grain and dairy produce would be shipped over it.

SAN BENITO.

SQUIRRELS TOO NUMEROUS.—San Benito Advocate, March 8: Reports from all sections of the county indicate that squirrels are again becoming a nuisance to the grain fields. The Board of Supervisors is willing to aid, recognizing the immense loss that follows the increase in the squirrel colonies. Supervisor Fredson suggests that in lieu of a bounty for scalps, the county should make an appropriation for poison, and furnish it free to farmers. A few thousand dollars expended in poison will result in a large increase in the grain yield of the county.

SAN BERNARDINO.

A BIG LEMON.—Redlands Daily Facts: One of the largest lemons seen at the Board of Trade room was brought in by H. H. Lineau. It is 13½ inches in circumference the greater way round and 11 inches the lesser way, and weighs seventeen and one-half ounces.

SAN DIEGO.

HEAVY LEMON OFFERINGS. — San Diego Union, March 7: Never before in the history of the county have the offerings of lemons by growers been greater than now, and never before has there been a larger crop on the trees and in prospect. Coupled with this gratifying situation is a good demand for the fruit in the East at fair prices—prices that are considerably higher than is being paid for oranges. There is one drawback, however, and a very serious one, especially at the height of a shipping season, and that is a scarcity of cars. Last week about thirty cars of fruit were shipped from this county over the Santa Fe road and quite a number of carloads went out on the Pacific Coast Steamship Company's line, the exact number of which Agent Johnson refused to disclose. The quality of the lemons being brought in is said to be very good. The rains of last month had a very beneficial effect, although in some instances it caused the rind to become puffy. The trees are loaded with fruit and many new trees are bearing this year for the first time. It is the general opinion that with a few later rains the summer crop will be enormous and of an exceptionally fine quality.

SAN JOAQUIN.

NEW WAY OF GRAPE PLANTING.—Lodi Sentinel: There is a new method employed in setting out grape vines, which gives one-third more to the acre than by the old way. This is known as the triangular method, the vines 10 feet apart. Instead of planting in successive straight rows, the scheme is to drop the first vine on every other row 5 feet, thus bringing it midway between vines 1 and 2 of the row before. Thus a triangle will be formed with the three vines. In this way it is said that 500 vines can be set in an acre, against 435 by the old plan. There is great activity in grape planting circles at present and many small vineyards are being set out. Contrary to expectations, but little attention is being paid to resistant stock, and there seems to be a feeling among vineyardists, as a rule, that it is time to cross a bridge when you come to it.

SANTA CLARA.

REPLANTING PRUNE AND APRICOT TREES. — Campbell Visitor, March 1: L. H. Sly is having 600 prune and apricot trees pulled out by John Rodoni's stump pulling machine. The trees were nearly all killed by borers, but it is thought that the carbon used several years ago is really the cause. A. E. Sargent, the foreman, is in charge of the work and he has secured 400 good Oregon prune and 200 apricot trees to take the place of the dead ones.

AFTER REA'S STOCK FARM.—San Jose Mercury, March 11. The Chinese Consul, who is in San Jose, is after the racing stable and stock farm of James W. Rea. He is credited with offering Mr. Rea $50,000 for the blooded stock and farm. Among the thoroughbred horses in Mr. Rea's stud are the well-known racers Much Better, Esther Downs, Iran Alto and Fredericksburg. The farm consists of eighty acres on Guadalupe creek, about 6 miles northwest of San Jose, is well equipped with good buildings, training track, etc.

SANTA CRUZ.

INCREASING ORCHARD ACREAGE.—Watsonville Pajaronian: Over 150,000 young apple trees have been sold in Pajaro valley this spring. Of this number the majority of the trees are Newtown Pippins and Bellefleurs. The orchard acreage in this valley is being largely increased this year.

SONOMA.

LARGE ACREAGE OF SUGAR BEETS TO BE PLANTED.—Santa Rosa Press-Democrat, March 7: The California-Hawaiian Sugar Refining Co. will plant 2000 acres of beets on its plantation at Reclamation this year. This is a far larger acreage than ever before planted on the ranch. The manager is now hunting for men and teams to prepare the ground. The big tract of land bought near Schellville several months ago by Manager Raaf and others will be broken this spring, but only a small portion will be seeded. Some seventy-five or eighty acres will be planted.

VINEYARD PROSPECTS.—Santa Rosa Republican: Every indication on which an opinion can be based points to an exceptionally large grape crop this year, and there is also every prospect that the price will be high. During the last three dry years a large per cent of the grape vines of some sections died, and many others have been pulled up because the price of grapes was so low it did not pay to raise them. The result is that while the crop will be abundant this year on the remaining vineyards, the number of vines is so materially less than formerly that grapes will still command a high price.

ORANGE AND LEMON COMBINED.—Healdsburg Tribune: By calling on George Remmel of Geyserville one may see quite a freak of nature in the form of fruit that is part orange and part lemon. On the place of John Thayer is a seedling orange tree that was grafted into lemon, and this is the result. Part of the covering has the appearance of the orange, while the remainder is strictly lemon skin, both in color and texture.

APPLES SOLD FOR ONE CENT A POUND.—Sebastopol Times: James Ross purchased from two local Chinamen four tons of dried apples, the price being 1 cent a pound. For this fruit 7½ cents per pound was refused some time ago. At present there is no activity in the apple market, and many of the growers who refused to sell when good figures were offered cannot now dispose of their fruit at any price.

STANISLAUS.

ALMONDS AND APRICOTS NOT BLOSSOMING WELL. — Modesto News: Last year the crop of apricots and almonds in this section was unusually heavy. This year the lack of blossoms indicates that there will be a very small crop in this section. There have been but a few blossoms on the trees, and the trees are now so far advanced that the blossoming season has passed.

TULARE.

WILD BELGIAN HARE.—Tulare Register: The first wild Belgian hare reported in Tulare has appeared and has been counted—also roasted. A few days ago the aforesaid Belgian reached the yard of C. Herman and was promptly shot and served up for dinner.

TICKS IN GRASS.—Visalia Times: Jasper Harrell says there has not been as fine wild feed on his ranch in twenty years as there is to-day, and he has not a hoof of cattle on the place to eat it. His cattle became infected with the Texas tick, so he doctored and dipped them and then sent them elsewhere to graze. As these ticks live in the grass and soil, Mr. Harrell will burn all his feed for two years with the purpose of killing them.

VENTURA.

THE SUGAR BEET CROP.—Courier: From the best information obtainable beet thinning will commence early this year. Fully 2000 acres were planted to beets before the rains. Many acres are already showing good stands and there will soon be a demand for labor in thinning that will give employment to a large number of laborers. As soon as the ground admits, from 12,000 to 14,000 acres more will be put in.

YOLO.

ORANGE GROWING PROFITABLE. — Winters Express: Who says it won't pay to raise oranges in this section? Mrs. M. A. Wolfskill has sold from one seedling tree $15 worth of oranges at half a cent apiece.

YUBA.

HOP ROOTS DYING.— Wheatland Four Corners: Work in the hop yards will soon begin by trellis repairing. Much repairing will have to be done, as for some reason last season hops died out quite freely. The cause of roots dying is not understood, but it is supposed to be due to weather conditions, as reports from all hop sections of the coast show an increased number of dead hills.

OREGON.

HORSES FOR THE ENGLISH ARMY.—Portland, March 8. — J. F. Cook, of Omaha, arrived here to-day for the purpose of buying horses for the British army. He has bought 200 head in Harney county for early delivery, and expects to purchase 500 more in this State.

Horse Owners! Use GOMBAULT'S Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.*

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KENDALL'S SPAVIN ...CURE

the old reliable remedy for Spavins, Ringbones, Splints, Curbs, etc., and all forms of Lameness. It works thousands of cures annually. Cures without a blemish, as it does not blister.

IT HAS NO EQUAL.

So. Easton, N. Y., April 2nd, 1900.

Dr. B. J. Kendall Co.:—I have used your Kendall's Spavin Cure for over ten years and I find it will do everything you claim. I have cured both Spavins and Shoulder Lameness, and I think Kendall's Spavin Cure has no equal. DOUGREY JOYCE.

Such endorsements as the above are a guarantee of merit. Price, $1; six for $5. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address

DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

HORSE COLIC,

Distemper, Founder, Pneumonia, etc., as well as all forms of Lameness, Contracted Cord, Curb, Splint, etc., are instantly relieved, and invariably cured by the use of

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Satisfaction guaranteed or money refunded. Used and endorsed by the Adams Express Company. Used by leading breeders and turfmen everywhere. Has saved and cured many valuable horses. May do likewise for you.

TUTTLE'S FAMILY ELIXIR cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience" FREE.

Tuttle's Elixir Co., 88 Beverly St., Boston, Mass. 437 O'Farrell St., San Francisco, Cal.
Beware of so-called Elixirs—none genuine but Tuttle's.
Avoid all blisters; they offer only temporary relief if any

THE VINEYARD.

The Different Methods of Grafting Vines.

To the Editor:—I have read with a great deal of interest the articles of Mr. Felix Gillett and of my young friend, F. T. Swett. While I think the methods of grafting cannot be too much ventilated, I think it should be done calmly and without harping on one individual, as friend Swett has done, by making me alone responsible for all the opposition to his pet method. But I can excuse both him and Mr. Bioletti with the ardor of youth, who think they have found the true practice and cry "Eureka" over it. When I look back over fifty years of nursery practice, and the enthusiasm I felt over any new problem worked out, as I had to do almost single-handed then, a feeling of regret steals over me that I cannot enthuse now over new experiments as I did then. But an exchange of opinions is always useful, so let us turn to the subject at issue calmly, "with malice to none and charity to all."

In reading Mr. Swett's paper over carefully, and drawing conclusions from it, I have come to the conviction that it is about as strong an argument for planting cuttings directly in vineyard, cutting out all the lower buds, and having only a few to form the top, as can be made, for the following reasons: 1. It places the cutting just where it ought to make and have its roots, to reach down into the subsoil, undisturbed by transplanting or removing. 2. It obviates all removal of non-resistant roots, as the vine can and should be grafted above the ground. If the soil is drawn carefully around the junction, to keep the graft from drying out, and the stock is strong enough to close around the scion fairly and hold it in its place, no tying will be necessary; and if the scions are kept dormant until the sap is in rapid motion, the junction will take place immediately. These little mounds, together with the stakes which should be placed with them immediately after grafting, will protect them from careless hands, and, under fair treatment, 90% will grow.

How is it with the bench grafts? Mr. Swett does not enlighten us how many a good workman can make. In former communications the advocates of bench grafting said that the cutting and the scion must be of the same size and that a careful man could not make more than 200 per day. According to his own statement, he has as a result, which he thinks very favorable, 77%, or 154 from 200. That the coddling in callus bed, transplanting to nursery and the rubbing off of the roots which have formed on the scion at the junction, which he himself calls rather tedious, is not very expensive we will grant for the sake of argument. Still, it can hardly be less than $6 per 1000. But what he can not make me believe is that cutting, grafted on cutting, should develop very much vigor the first summer. It would be against all experience in plant life. The cutting has enough to do to make its own roots and a bare living, especially when it is removed from callus bed to nursery, and from there to the vineyard the next season. Add to this the constant disturbance to take off the non-resistant roots from the graft, and the practical vineyardists—and it is for them I am writing—will have their hands full and their purses empty before they receive any returns from their vineyards.

Mr. Paul Masson of San Jose, one of the first introducers of Rupestris St. George (and this seems to be the pet of Mr. Swett and Mr. Bioletti), told me that he could graft in vineyard and have at least 90% to grow. Mr. Beringer of St. Helena follows the same practice, and sees no reason yet to change. Mr. Schoenwald bench-grafts only a small number to fill out vacancies, but depends mainly on vineyard and nursery grafting. So much for the other side.

The Intermediate Way—Grafting in Nursery.—I agree with Mr. Swett that I would rather have a one-year-old plant for transplanting than a two-year-old. But he himself declares that there are not enough of heavy cuttings of Rupestris St. George in the State for bench grafting. So it may be the next best way to transplant but once, from nursery to vineyard, than to transplant from callus bed, then to nursery and again to vineyard. Therefore, under existing circumstances, it may be best to choose the middle way. My first choice is to plant the cutting directly in vineyard, and graft, when strong enough, above the ground. The next best may be to graft in nursery, also above ground. I wish all and every method and its advocates the best success, and let the best method win. George Husmann.

Napa, Cal.

A Cold-Box for Forward Cuttings.

D. A. Learned of Stockton tells the Mail that the late warm rain, followed by warm weather both day and night, the temperature being above 60°, caused all buds to burst far ahead of their usual time. Many vineyardists are in a quandary what to do in planting and in grafting on resistant stock. To such Mr. Learned offers the suggestion of providing cold storage for the cuttings. Make a box 5 feet square and 5 feet deep, more or less, according to the quantity of roots and cuttings to be stored. Leave one side of the box for entrance by horizontal door. Plant four posts 18 inches distant from the corners. On these posts nail timber and fill it with chaff or straw. Any one who can drive a nail, with lumber and tools at hand, can make such a rude structure in half a day, and from ten to fifteen pounds of ice will stop the buds' growing for a month. A carpenter can make such an entrance that this cold storage can be used for kitchen purposes.

The Whole Story in one letter about

Pain-Killer

(PERRY DAVIS'.)

From Capt. F. Loye, Police Station No. 5, Montreal:—"We frequently use Perry Davis' Pain-Killer for *pains in the stomach, rheumatism, stiffness, frost bites, chilblains, cramps*, and all afflictions which befall men in our position. I have no hesitation in saying that Pain-Killer *is the best remedy* to have near at hand."

Used Internally and Externally.

Two Sizes, 25c. and 50c. bottles.

NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock, A. M., Wednesday, the 10th day of April, 1901.

I. C. STEELE, President.
CHARLES WOOD, Secretary.

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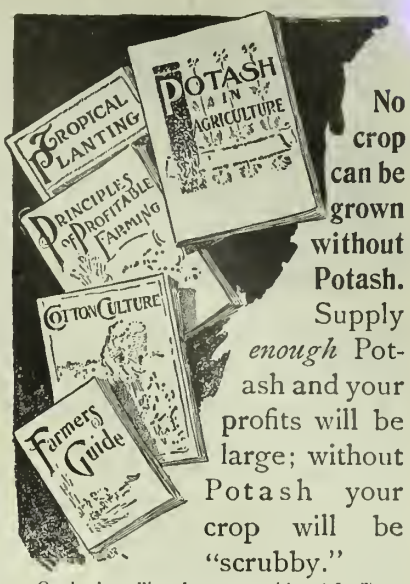

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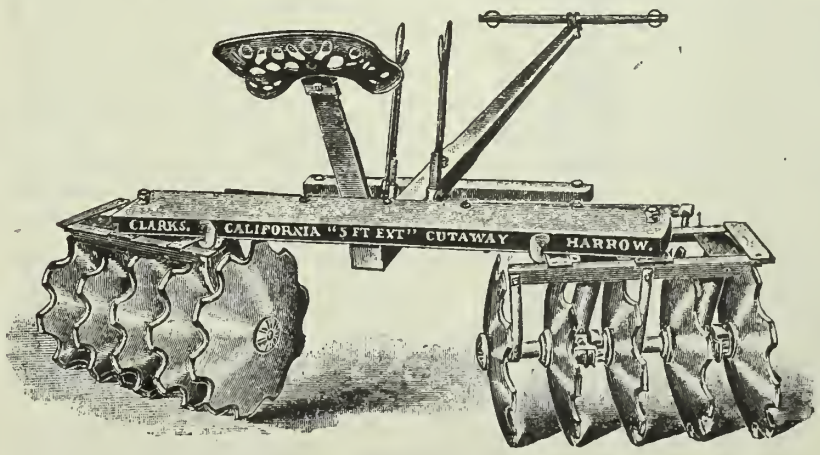
This harrow can be used to throw the earth to or from the tree. It can be drawn together and used in the regular length or extended as shown. The 5 and 6 are best all round two-horse harrow.



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Clark's "B5" Reversible, DOUBLE LEVER, Extension Head Harrow.

"B5"	5-foot cut, 10 twenty-inch discs,	Price $42 50.	This week,	$30.25
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A virus for destroying ground squirrels or "gophers."

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HAWKEYE STUMP PULLER... Pulls an ordinary grub in 1½ minutes. *Pulls either standing Timber or Stumps.*

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THE HOME CIRCLE.

Beautiful Threads of Gold.

Weaving into a workaday life
Beautiful threads of gold!
A thread of joy, with a strand of strife,
And ever the hands which hold
May fashion them into patterns rare
Or designs of beauty, new and fair,
Till the Master weaver finds them there,
In beautiful threads of gold.

Weaving them in with a patient hand,
Beautiful threads of gold!
Filling them in as the Master planned
When he laid life's somber fold.
Weaving them in with homeliest cares,
Over some burden another bears—
Rejoice that the Master weaver spares
Some beautiful threads of gold.

Weaving them in with the hopes and fears,
Beautiful threads of gold!
Brighter the gold of the thread appears,
As the web of life grows old.
Weaving them in with a smile and song,
Such wonderful threads, so fine and strong,
Under the good and over the wrong,
Weave beautiful threads of gold.

—Anna J. Grannis.

Success.

Success! It is won by a patient endeavor,
Energy's fire, and the flame glow of Will;
By grasping the chance with a "Now, now or never!"
Urging on, on! while the laggard stands still.

Success! It is facing life's trials, undaunted;
Fighting the present—forgetting the past:
By trusting to Fate, though for years she has taunted,
And bearing Time's sears; facing front, to the last.

Success! Would you win it and wear its bright token?
Smile and step out to the drummer's light lilt;
Fight on till the last inch of sword blade is broken.
Then do not say die. Fight on with the hilt!

—Mary Markwell in Success.

A Lover's Quarrel.

Bob Jamieson stamped around his room, dropped his favorite pipe, said something untranslatable, and picked up his cap.

He paused for want of breath, his eyes flashing, his nostrils dilating—with calm contempt, it is to be supposed.

"No, my dear Dolly, I daresay you will be expecting me to come and apologize, and implore you to come out on the river with me, but you'll have to send for me first."

With which noble display of independence Robert Jamieson flung out of his room and down to the river, metaphorically patting himself on the way, and all the time dreading the blank in his life which he would feel as soon as his rage should cool down.

Dolly Parsons put on her prettiest white frock and a picturesque sun hat. "If Mr. Jamieson calls, tell him I am out," she said to the maid. "I am going on the river."

She told herself this last piece of information was for the benefit of the servant, in case she required to know.

"When he comes and finds me gone, he will be furious. I will take my canoe and stay out till quite late. I'd love to frighten him thoroughly."

Miss Parsons' bright brown eyes flashed a little. A faint flush appeared on her pretty cheeks—it was a flush of anger, but it was eminently becoming. She looked maddeningly pretty as she sat in her canoe and paddled away up stream. It was a glorious afternoon, and the river was looking its best; but Dolly Parsons' eyes were not filled with appreciation of the beauty around her. She repeated to herself again and again the horrid things Bob had said.

"No. she would not forgive him for a long time; it would not do; the circumstances were too aggravated. He would be coming back expecting her to forgive everything—some girls might be so silly, but he would find she was made of different stuff."

And all the time she knew that she dared not let her anger cool, for a horrid, absorbing pain would fill her heart at once, and a wretched feeling of loneliness and depression, and she hated to be unhappy.

She paddled on and on, until the other boats were all left behind. She was very tired, but she would not stop. Her mind was made up on one point; she would frighten Bob Jamieson into an appreciation of her worth.

It was almost twilight when she turned to go home; the river seemed to her to have suddenly become lonely and depressing; the sun had gone down and a chill wind had sprung up. Dolly paddled fast and splashed the water over her pretty frock, and grew cross and miserable. She had quite expected Bob would have followed her to "make it up;" she had decided how long she would keep him in suspense, and how, at last, to forgive him.

A clock in the distance struck seven. Dolly paddled faster and faster, though she was so tired she hardly knew how to go on. She looked anxiously along, when swiftly around the bend she had just cleared shot another boat, close her wake. It came so swiftly it was almost on her before the sound of the oars made her glance up; it came so close that her cry to "look ahead!" came too late.

She screamed with alarm and missed her stoke. The man in the other boat looked around with annoyance written on every feature, and then, before he could back water, the impetus of his last stoke brought the nose of his boat with a crash into the stern of her canoe; which filled and sank instantly.

"Bob! Bob! Bob! Help!" But before the cry was past her lips Dolly had gone under.

"Great Scott! It's Dolly!"

In a second Bob had sprung into the water after her. A stupefied face rose above the surface and two hands struggling wildly to clutch something; then she sank again. In desperation Bob made a wild plunge at the spot where she had gone down, and this time caught a bit of her sleeve. It was barely enough to support her by, but having got a hold he made the most of it, and managed to keep her up until he could grasp her firmly, then by degrees he drew her to the bank, and in time managed to lift her into his boat, which fortunately had drifted to the bank. She was conscious again by that time, and he laid her in the boat and wrapped his coat about her. She was not really hurt, only overcome with the shock and weariness; but she looked a very piteous and forlorn little creature as she lay shivering in the bow while Bob pulled as quickly as he could to the boathouse. In spite, though, of her plight, her spoiled clothes and general discomfort, she did not feel as depressed as she had done before the plunge, nor did the world seem so utterly devoid of happiness.

"Bob," she said, after silently watching him for some moments, "Bob—why were you up the river so late?"

"Why were you?" answered Bob, not without embarrassment.

"Will you tell me if I tell you?"

"Yes," he said, his color heightening.

"Well, I was angry with you, and I wanted to—frighten you."

"You carried your scheme to perfection, dear."

"But Bob, I didn't—oh, Bob," in a great state of consternation, "you can't think I fell in on purpose?"

"No dear; I am quite convinced of that."

Dolly looked at him thoughtfully for a moment.

"Bob," she said severely, "what do you mean?"

"Well," he answered, with conviction, "young women don't put on their prettiest dress when they contemplate a dive."

Dolly had the grace to blush. "My poor dress!" she said dolefully; "and I was looking so nice when I started," she added regretfully. "I must be a fearful fright now, though," with sudden consciousness. "Am I, Bob? Do I look very dreadful?"

"I have seen you looking better, darling."

Dolly's brow puckered again.

"Now tell me why you were up here so late."

Bob did not answer; he seemed deeply interested in something on the bank.—Mabel Quiller-Couch.

Curious Facts.

The State of Pennsylvania has purchased 100,000 acres of land for a forestry preserve.

There are forty islands in the Scilly isles, with a total area of fifty-five square miles.

Seventy-one degrees below zero was the record of low temperature registered by Schwatka on the Great Fish river in Canada.

The funnels of the steamer Oceanic are of such gigantic proportions that two tram cars could pass through them, side by side.

The jellyfish has no teeth, but uses himself as if he were a piece of paper when he is hungry, getting his food and then wrapping himself about it.

It is a strange fact that the right hand which is more sensitive to the touch than the left, is less sensitive than the latter to the effect of heat or cold.

An example of patient industry is the sorting of hogs' bristles as it is carried on at Tien Tsin, China. Each one of the bristles has to be picked out, measured, and placed in the bundle of hairs of corresponding length.

"It has been estimated," says a man quoted by the Philadelphia Record, "that there are about 350,000,000 hens in the United States. During the year 1900 they produced approximately 14,000,000,000 eggs, which represent in the neighborhood of $175,000,000. That seems a lot of money, but just wait a minute." He figured on a slip of paper with a pencil. "The living value of hens at 30 cents apiece," he continued, "is not far from $100,000,000, besides which about $130,000,000 worth of poultry is eaten in this country in the course of a year. So you see the hen, while a humble bird, cuts quite a figure in the financial world."

Humorous.

BARBER (absently): "Shampoo, sir?" Customer (with shining bald pate): "No—shine!"—Glasgow Times.

MRS. FANGLE: "The papers mention a man who has cooked his own breakfast for fifteen years." Mr. Fangle: "He must have been very hungry when he finally got it done."—Tit-Bits.

"If you'll split some wood I'll give you a good meal," said the lady of the house. "Excuse me, madam, haughtily returned the wanderer. "I never begin breakfast with a chop."—Philadelphia Record.

MRS. MCSWATTERS: "I read here that $20,000,000 in gold were shipped to England last week. What's that mean?" McSwatters: "I guess a couple of American heiresses must have got married."—Syracuse Herald.

WIFE: "We have been married twelve years, and not once in that time have I missed baking you a cake for your birthday. Have I, dear?" Hubby: "No, my pet. I look back upon those cakes as milestones in my life."—Credit Lost.

"I SHOULD think you would be afraid to eat onions in the middle of the day," said the blond typewriter to the brunette when they met at dinner. "I'm not a bit," replied the dark one; "you see, our office is on the thirty-sixth floor, and when I go up in that elevator it takes my breath away."—Yonkers Statesman.

"THOMAS," said the teacher of the class in physiology, "can you give a familiar instance of the power of the human system to adapt itself to changed conditions?" "Yes'm," responded Tommy Tucker. "My Aunt Abigail gained a hundred pounds in flesh in less 'n year, an' she didn't crackle a particle."—Chicago Tribune.

ARE YOU PLUMP

or thin? red cheeks or sallow life in your step or feel your weight? are you comfortable or hoping to be so next spring or summer or fall?

One is health; the other is not-quite health.

This condition of not-quite health can be turned into health with Scott's emulsion of cod-liver oil.

It is a pity to get in the habit of thinking of health as a thing to be hoped for; why not go for it now!

There is only one way to make strength: by food. You want appetite first, then food. The emulsion will give you food-rest, to master your food with.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

GLENN RANCH,

Glenn County, : : : : California,

FOR SALE

In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

Mt. Campbell Orange Tract,

22 Miles East of Fresno, near Reedley.

SOIL—Red dry bog; the very best.

WATER—Large Alta canal and reservoir.

LOCATION—High sloping mesa above frost line

Now offered for sale with water at $75 to $100 per acre in 10 or 20 acre tracts.

W. N. ROHRER, FRESNO, CAL.

School of Practical, Civil, Mechanical, Electrical and Mining Engineering,

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113 FULTON ST., *one block west of City Hall*,
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Open All Year. : A. VAN DER NAILLEN, Pres't.

Assaying of Ores, $25; Bullion and Chlorination Assay, $25; Blowpipe Assay, $10. Full course of assaying, $50. Established 1864. Send for Circular.

W. T. MUGG & CO.,

make a specialty of selling good raisin vineyards. Correspondence solicited.

OFFICE, 943 J ST., FRESNO, CAL.

The Motive Power.

Not he who hews the tree with well-aimed ax,
Not he who tunnels through the stubborn stone,
Not he who boasts the mettle of Ajax,
Nor, Zeus-like, hurls thunder from a throne.

But he who stoops to watch the daisy grow,
Who seeks the sap within the sapling's sheath,
And he who learns by force of mind to know
The marvels of the universe, beneath.

Not he who rests upon the glory won,
Not he who sighs to have his life work through,
But he who, in the midst of what is done,
Impatient stands for what is still to do.

—Montrose J. Moses in Success.

Hints to Housekeepers.

For an afternoon tea sandwiches, cake, tea and a cold or frozen beverage usually comprise the bill of fare. Confections and salted almonds may also be added.

For a French dressing one tablespoonful of oil to three of vinegar is the generally accepted proportion, with a half saltspoonful of paprika and a half tablespoonful of salt. Put the ingredients and the oil into a bowl and stir until the salt dissolves. Then add the vinegar and stir thoroughly.

A pretty centerpiece that attracted much notice from a housewife's guest recently, proved to be a discarded caster that had been stowed away with other relics for years. The six bottles had been removed and in their stead had been placed three tiny pots with ferns and vines. The castor stood on a glass mat.

Steamed vegetables are said to be much more nutritious than those cooked in the usual way, as they do not come in contact with the water, and so do not lose any of their flavor. Beets and onions are especially delicious cooked by this process, and even meats and chicken, it is claimed, are improved by first steaming them, and afterwards browning them in the oven.

Crude oil is an excellent thing with which to keep hard wood or painted floors in good condition. If put on with a soft flannel cloth, and rubbed and polished with another, even a painted floor will soon have a surface that will reflect the stripes or figures of the curtains. Crude oil will also clean and polish furniture, and is most generally used in all the large furniture shops, where each piece is gone over two or three times a week. Mahogany is a wood that soon shows the effect of dust or dampness, but an application of this oil will renew its original brightness.

Chicken salad sandwiches are not quite the obvious compound that their title indicates. The white meat of the chicken should be chopped very fine and pounded in a mortar to a smooth pulp. This is seasoned to taste with salt, paprika, olive oil and a little lemon juice, and is spread upon thin slices of bread, cut in oblongs or diamonds or fancy shapes. The covers to these slices are spread with butter into which is pressed almonds or English walnuts, sliced, not chopped very thin. The pieces are then put together and are often tied with ribbon to hold the pieces of bread together.

Vegetables such as onions, cabbage, cauliflower and turnips may be made more delicate and wholesome by allowing their odors to escape with the steam while they are boiling. There will also be less odor observable about the house if this is done than if the flavors are allowed to concentrate in tightly closed vessels. While doubtless a certain amount of nutrients are lost by this means, the vegetables by being rendered more palatable become more digestible. The same is true of boiled meats, and the lid of the kettle should be left partly off while they are cooking, otherwise there will be a strong, unpalatable flavor. All green vegetables should be boiled in an uncovered vessel. Some housekeepers claim that a dish of steaming vinegar on the range will prevent cooking odors from permeating the house.

DOMESTIC ECONOMY.

Various Methods in Which Prunes May Be Used.

NUMBER IV.

Our prunes are sweet enough not to need sugar to improve their flavor, but the addition of sugar makes the cooked product richer and more attractive. The use of sugar is merely a question of economy. With prunes at 3 or 4 cents a pound and sugar at 5 cents, it is not economy to use sugar; but with prunes at 7 to 10 cents and sugar at 5 cents, the case is reversed, for all the sugar used is in the cooked product. The substitution of fruit sugar for so much meat as is usually eaten is a great step in the direction of good health, especially with children, who always have a "sweet tooth."

SOAKING.—Prunes should stand in tepid water a few hours and then be thoroughly washed and rinsed. This removes all foreign matter. They should then be put to soak with a little more water than is necessary to cover them. Now scatter on top the sugar, enough to give the richness desired. They should soak until they take up all the water they will; then they will be fairly plump. If they are pretty dry, it will take from twenty-four to thirty-six hours. Soft water is better than hard to give plumpness.

COOKING.—A little more water should be added and then they should be slowly boiled, not to exceed five minutes. This will tend to make the skins tender. Now set them back, where boiling will cease and where the temperature will stand at about 180°. At this temperature the prune will cook through and not harden. A higher temperature hardens the albumen, and they are not so fine in flavor.

When they are tender, best determined by dipping out one or two and pinching them, turn off all the water into a porcelain dish and boil it down to the thickness desired; then pour back over the prunes and the dish is ready. If wine is to be used, put it into the syrup after cooling, before it is put on the prunes. To put the wine in while cooking is to lose all by evaporation. I have found Sauterne rather better than claret.

TESTS.—If all this has been well done the following results will have been secured:

1. The liquor will be as clear as good wine.
2. The flavor of the liquor will be rich and fruity, far removed from the sickish sweet so often observed.
3. The prune will be tender and its flavor should be equal to or even superior to that of the syrup.

CHAS. H. ALLEN.

(TO BE CONTINUED.)

Domestic Hints.

CHEESE AND EGGS.—Mix a cup of fine bread crumbs and two cups of grated cheese with a cup of fresh milk. Add a little dry mustard and a dash of cayenne. Heat a tablespoonful of butter in the chafing dish and pour in the mixture, stirring constantly. Just before serving add two eggs well beaten.

BAKING OF BREAD.—If bread is made into small French loaves they may be light when put into the oven, which must be sufficiently hot to bake the loaves quickly in thirty minutes. If the loaves are in square pans and are larger, the oven may be slow at first. The bread may be in ten minutes before it browns; then it will be browned and baked in three-quarters of an hour. Rolls and small breads should be baked for twenty minutes in a quick oven.

BROWN SAUCE.—Put two tablespoonfuls butter or dripping from roast meat in a spider, add two tablespoonfuls flour and stir until a dark brown. Add one pint of hot water or brown stock, stir till thick and smooth and season to taste with salt and pepper, the amount depending on the previous seasoning in the stock or meat gravy. When making it for roast meat use all the brown glaze in the meat pan. Lemon juice, mushrooms, currant jelly, olives, pickles, horse raddish, bay leaf, catsup, wine and many other things may be used to flavor brown sauces.

CREAM ALMONDS.—These are made by dipping either the blanched or the dark almonds in soft frosting of the consistency as that used for the cocoanut creams, flavored and colored to taste. In green, yellow, pink or white they are toothsome, and serve to fill up the chinks when arranging boxes. When making only a small quantity of candy it is advisable to flavor and color each kind of cream made when it is but just stiff enough for icing. Then a few almonds may be dropped in and iced before stiffening to cream for other uses. Several pounds of these almonds do not come amiss in a sale.

Keeping Smoked Meats in Interior Valley and Foothills.

TO THE EDITOR:—In your last issue Geo. R. Wales, of Lassen county, gives his method of preserving smoked meats. While the method employed will give good results in the locality named—Lassen county climate being particularly adapted to the preservation of meats in any stage—I would not recommend its wholesale adoption in the great interior valleys of California. Whether it is in the texture or grain of the meat, in climatic influences or method of curing and smoking, I am unable to state, but I have never seen any bacon produced in the great valleys or the foothills adjacent thereto which would stand packing in boxes for any considerable time. If packed in boxes in a cool place it becomes moldy no matter how wrapped.

A safer way is to pile it up in some cool but well ventilated place where it can be easily looked over and shifted occasionally. LUM HUDSON.

Fresno county.

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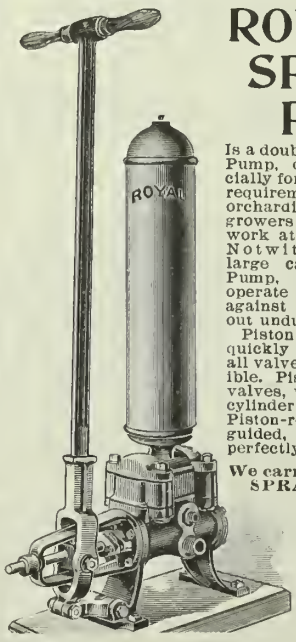

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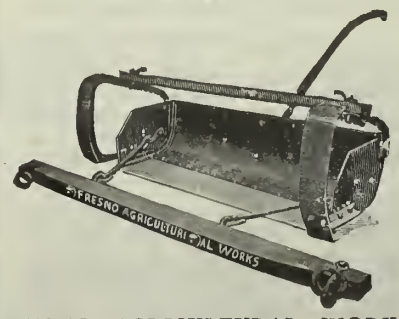

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 13, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	80⅛@79¾	79⅝@79¼
Thursday	79¾@79⅜	79¼@79
Friday	79⅛@79¾	78⅝@79¼
Saturday	79¾@80⅛	79⅜@79⅝
Monday	80 @79¾	79⅛@79
Tuesday	79⅞@79⅝	79¼@79

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	5s 11⅜d	6s 0¼d
Thursday	5s 11⅜d	5s 11¾d
Friday	5s 11 d	5s 11¼d
Saturday	5s 11⅛d	5s 11¾d
Monday	5s 11⅛d	5s 11¾d
Tuesday	5s 11¾d	5s 11⅞d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	98⅜@ 97½	1 03¾@1 03½
Friday	97½@ 97⅝	1 02¾@1 03½
Saturday	97½@ 98¼	1 04 @1 04¼
Monday	97⅞@ 98½	1 03⅞@1 04¼
Tuesday	98¾@ 98½	1 04½@1 04
Wednesday	98¾@ 99¾	1 04¾@1 05¼

WHEAT.

Dullness and lack of strength have been the prominent features of the wheat market since last review, as for some weeks preceding. One serious drawback is the scarcity of ships, this having operated against wheat the entire season. Taken in connection with the limited inquiry for wheat from importing countries, most of them having more wheat on hand or offering to them from exporting countries than they can advantageously take care of, it is not surprising that values for this cereal continue at a low range. Not until there is a crop failure in some extensive wheat area, or materially lower ocean freight rates, need any marked improvement in prices for wheat be looked for. That values will recede materially from current low levels is not probable, as the selling pressure is not now pronounced and will be still lighter if prices touch a lower plane. There are still large quantities of wheat on hand, however, in this State, and prospects for coming crop were never more favorable at corresponding date. What we need is a foreign market and plenty of ships to carry the grain outward. The United States visible supply east of the Rockies was reported at 55,893,000 bushels, a decrease for the week of 1,341,000 bushels. The Government report announced 128,100,000 bushels of wheat in farmers' hands, or 24.5% of the last crop, as compared with 158,700,000 bushels in 1900, or 29% of the 1899 crop.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 97⅛@99¾c.

December, 1901, delivery, $1.02¾@1.05¼.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at 98¾@99¾c; December, 1901, $1.04¾@1.05¼.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	95	@ 96¼
Oregon Valley	95	@1 00
Washington Blue Stem	95	@1 02½
Washington Club	95	@1 00
Off qualities wheat	90	@ 92½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	-s-d@-s-d	6s2½d@6s3½d
Freight rates	40@41¼s	37½@38¾s
Local market	$0 96¼@1 00	$0 96¼@0 98¾

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Prices are without quotable improvement and are not likely to record any advance in the near future. Spot stocks are of only moderate volume. Larger quantities than are offering could be placed for shipment, provided existing comparatively low rates for export grades proved acceptable. A full cargo of 24,600 barrels went forward this week per the French bark Sainte Anne for the United Kingdom.

Superfine, lower grades	$2 25	@2 40
Superfine, good to choice	2 50	@2 75
Country grades, extras	3 00	@3 25
Choice and extra choice	3 25	@3 50
Fancy brands, jobbing	3 50	@3 65
Oregon, Bakers' extra	2 75	@3 15
Washington, Bakers' extra	2 75	@3 25

BARLEY.

While there are no very heavy quantities being urged on buyers, there is more than enough barley on market, both of shipping and feed grades, to accommodate the immediate demand at existing rates. While the market throughout lacks firmness, sellers of common feed qualities are at greatest disadvantage, the excess of stocks being largest of this description. There is some barley going Eastward by rail, but the movement outward by sea at present is very light. Chevalier is practically out of stock and is not quotable in a regular way. Beyond limited seed requirements, this variety is not now inquired for, being taken mostly for export in the Summer and early Winter months.

Feed, No. 1 to choice	71¼@	73¾
Feed, fair to good	70 @	71¼
Brewing, No. 1 to choice	80 @	85
Chevalier, No. 1 to choice	—	@—
Chevalier, No. 2	—	@—
Chevalier, poor	—	@—

OATS.

Market is slow and the trend of values is to easier figures than have been current for some months past, although no special reductions are as yet warranted in quotable rates. Sales are not readily effected, however, at full current figures. While holders are not, as a rule, inclined to grant buyers very marked concessions, the acceptance of materially lower prices than generally asked would be necessary to effect free sales.

White Oats, fancy feed	1 42½@1	47½
White, good to choice	1 30 @1	37½
White, poor to fair	1 20 @1	27½
Gray, common to choice	1 20 @1	37½
Milling	1 42½@1	47½
Surprise, good to choice	1 42½@1	50
Black Russian	1 12½@1	35
Red	1 20 @1	45

CORN.

There is not much offering, neither is the inquiry active at prevailing values. Stocks are principally Eastern White and Large Yellow. Supplies of domestic Small Yellow are exceedingly light.

Large White, good to choice	1 15 @1	17½
Large Yellow	1 15 @1	17½
Small Yellow	1 50 @—	
Eastern, in bulk (carload lots)	1 08 @1	10

RYE.

Market is dull and unfavorable to sellers. Most dealers have all they care to carry. For some off quality rye 75c. was accepted.

Good to choice, new	77½@	80

BUCKWHEAT.

None arriving. The small stocks, mostly in the hands of local millers, are being very steadily held.

Good to choice	2 00	@2 10

BEANS.

Business in this department continues of a light order. While stocks are small, they would admit of considerable more trading than is being transacted. White varieties are in scantiest supply, and are held at too stiff figures for the majority of dealers or consumers to purchase. Colored beans are tolerably reasonable, as compared with prices asked for white varieties, but even colored kinds are high, considering prices which have been current for same in times past. No special activity in either white or colored beans is looked for during the next few months.

Pea, fair to good, 100 lbs	—	@—
Small White, good to choice	4 75	@4 90
Lady Washington	4 10	@4 25
Butter	4 25	@4 50
Pinks	2 15	@2 25
Bayos, good to choice	2 65	@2 75
Reds	3 00	@3 25
Red Kidney	4 00	@4 25
Limas, good to choice	5 65	@5 75
Black-eye Beans	2 75	@3 00
Horse Beans	1 75	@2 00
Garhanzos, large	2 00	@2 25
Garhanzos, small	1 25	@1 75

DRIED PEAS.

About five carloads of Eastern Green Dried have been landed here within the past fortnight, causing market for domestic to be slow and lower. In Niles Peas there is practically nothing doing.

Green Peas, California	2 65	@2 75
Niles Peas	1 60	@1 75

WOOL.

The local market remains dull, and is likely to continue so for some weeks, for same reasons previously stated in these columns, operators preferring to do their work in the interior, now that the new Spring clip is near at hand. With dullness prevailing here, dealers are able to operate to better advantage in the interior than they would if there was an active and firm market in this center. Shearing is now under headway in the Southern counties.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarse to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

Little doing in hops, either in a wholesale or jobbing way. Stocks at present are too light to admit of any extensive operations. It is estimated that not much, if any, over 3,000 bales now remain on this coast, of which quantity 1,300 bales are credited to Washington, 700 bales to Oregon, and 1,000 bales to this State. Values remain quotably unchanged, but are largely nominal at this date.

Good to choice 1900 crop	13½@16	

HAY AND STRAW.

While strictly choice to select wheat hay is not offering in heavy quantity, and in a small way sells to fair advantage, occasionally above quotable rates, the market for the more common grades of hay is slow and weak, with offerings heavy of latter description. Straw is commanding fairly steady rates.

Wheat	8 00	@13 00
Wheat and Oat	8 00	@11 50
Oat	7 00	@11 00
Barley	6 00	@ 8 50
Volunteer	5 00	@ 7 00
Alfalfa	8 00	@ 9 50
Stock	5 00	@ 7 00
Compressed	8 00	@12 50
Straw, ₱ bale	40	@ 47½

MILLSTUFFS.

Most kinds of mill offal are in sufficiently liberal supply to give market for same an easy tone. Especially is Bran offering in liberal quantity, as compared with immediate demand. Rolled Barley remained quotably as last noted. Milled Corn was steadily held.

Bran, ₱ ton	14 50	@15 00
Middlings	17 00	@19 00
Shorts, Oregon	15 50	@17 00
Barley, Rolled	15 50	@16 00
Cornmeal	25 50	@ —
Cracked Corn	26 50	@ —

SEEDS.

A shipment of 30,534 pounds Mustard Seed went forward the past week per Panama steamer for New York. There is not enough Mustard Seed on the local market to enable giving quotations. Alfalfa Seed is in light stock, but demand for the same is practically over for the season. In values for Bird Seed there are no quotable changes to record, business being mainly of a light jobbing order.

	Per ctl.	
Mustard, Trieste	—@—	
Mustard, Yellow	—@—	
Flax	2 50	@3 00
Alfalfa, Utah	9	@ 9½
Alfalfa, California	8	@ 8½
	Per lb.	
Canary	3½	@ 4
Rape	2	@ 2½
Hemp	3	@ 3½

BAGS AND BAGGING.

Conditions in the Grain Bag market remain practically as last noted. There is a fair business doing in Calcuttas for forward delivery at prevailing rates. Wool Sacks are beginning to go into the interior on account of Spring clip, prices remaining as last quoted.

Calcutta Grain Bags, buyer June-July	6⅝	@—
Calcutta Grain Bags, spot	6½	@—
San Francisco Grain Bags, 22x36, spot	6½	@—
State Prison Bags in lots of 2000, ₱ 100.5	65	@—
Wool Sacks, 4 lbs	32½	@35
Wool Sacks, 3½ lbs	30	@32½
Fleece Twine	7½	@—
Gunnies	—	@12½
Bean Bags	4⅞	@ 5¼
Fruit Sacks, cotton	6½	@ 7¼

HIDES, PELTS AND TALLOW.

The general features of the market remain virtually the same as a week ago. There is a fair demand for Hides at current rates. Pelts move slowly. Tallow is not neglected.

HONEY.

Owing to bright outlook for coming crop, the market has a much easier tone than during greater part of the season now drawing to a close. Demand at present is light, and holders are granting concessions to buyers rather than miss sales, although spot stocks are small.

Extracted, White Liquid	6	@ 6½
Extracted, Light Amber	4½	@5
Extracted, Amber	4	@ 4½
White Comb, 1 lb frames	12	@13
Amber Comb	11	@12
Dark Comb	7	@ 9

BEESWAX.

Values continue to prevail at same range as for some time past, with supplies of very slim volume.

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

Demand for Beef is not very brisk, but market is lightly stocked and values are ruling steady. Mutton is slightly lower than last quoted, the supply being more than sufficient for immediate needs. Lamb brought much the same figures as preceding week, but market was not particularly firm at the quotations. Veal which was not too old nor too young sold to very good advantage. Hogs are not in excessive supply, nor are they likely to be in the near future. Last quoted prices continued to prevail.

Beef, first quality, dressed, net ₱ lb	7¾	@ 8
Beef, second quality	7½	@ 7¾
Beef, third quality	6½	@ 7½
Mutton—ewes, 9@—c; wethers	9	@ 9½
Hogs, hard grain fed, medium	6½	@ 6¾
Hogs, small, fat	6½	@ 6¾
Hogs, large, hard	5¾	@ 5⅞
Hogs, feeders	5¼	@ 5½
Hogs, country dressed	7½	@ 8
Veal, small, ₱ lb	8	@ 9½
Veal, large, ₱ lb	8	@ 9
Lamb, spring, ₱ lb	11	@—

POULTRY.

No pronounced changes were established in quotable rates or the tone of the market. Most kinds of poultry in prime to choice condition met with tolerably prompt sale. Large young fowls were most sought after and brought best figures. Not much attention is being given to Turkeys, the meat being invariably undesirable at this time of year. Pigeons did not lack for attention, either Old or Young, but latter kind was most in request.

Turkeys, live hens, ₱ lb	12½	@ 14
Turkeys, live gobblers, ₱ lb	10	@ 11
Turkeys, Dressed, per lb	12	@ 13
Hens, California, ₱ dozen	4 00	@5 50
Roosters, old	4 00	@4 50
Roosters, young (full-grown)	6 00	@7 00
Fryers	5 00	@5 50
Broilers, large	4 50	@5 00
Broilers, small	3 00	@4 00
Ducks, old, ₱ dozen	4 00	@5 00
Ducks, young, ₱ dozen	6 00	@7 00
Geese, ₱ pair	1 50	@1 75
Goslings, ₱ pair	2 50	@2 75
Pigeons, old, ₱ dozen	1 75	@2 00
Pigeons, young	2 50	@3 00

BUTTER.

As is to be expected in the Spring season, the butter market is displaying weakness, quotable rates for creamery extras showing further reduction. The quality of arrivals averaged better than preceding week. There was a fair movement outward at the prevailing values.

Creamery, extras, ₱ lb	17	@18
Creamery, firsts	15	@—
Creamery, seconds	—	@—
Dairy, select	15	@—
Dairy, firsts	13	@14
Dairy, seconds	12	@—
Dairy, soft and weedy	—	@—
Mixed store	11	@—
Creamery in tubs	17	@18
Pickled Roll	17	@18
Firkin, California, choice to select	17	@18
Firkin, common to fair	15	@16

CHEESE.

Stocks have been kept down to small proportions, but in some instances rates were shaded in favor of buyers, rather than miss sales, the general desire being to prevent accumulations. Eastern is in light stock, both here and at producing points.

California, fancy flat, new	9	@—
California, good to choice	8½	@—
California, fair to good	8	@—
California Cheddar	—	@—
California, "Young Americas"	9	@ 9½

EGGS.

There has been free purchasing the past week on cold storage account, both here and in the interior. The demand for immediate use was also brisk. There is no probability of prices for choice eggs touching lower levels this season than are now current.

California, select, large, white and fresh	13½	@14
California, select, irregular color & size	12½	@13
California, good to choice store	12½	@13
Eastern, as to section and grading	—	@—
Eastern, cold storage	—	@—

VEGETABLES.

There were increased receipts of fresh vegetables, especially of Asparagus and Rhubarb, and lower prices prevailed. Onions continued to move slowly, and although there were no heavy quantities on market, there were too many for the demand at current rates, buyers taking hold very slowly. Other Winter vegetables did not make much of a showing, neither did they meet with special or active inquiry.

Asparagus, ₱ lb	4	@ 9
Beans, String, ₱ lb	5	@ 7
Cabbage, choice garden, ₱ 100 lbs	1 00	@1 25
Cauliflower, ₱ dozen	50	@ —
Egg Plant, ₱ lb	10	@ 12½
Garlic, ₱ lb	3	@ 4
Onions, Yellow Danver, ₱ cental	2 50	@2 75
Peas, Sweet, garden, ₱ lb	4	@ 5
Peppers, Green Chile, ₱ lb	10	@ 12½
Rhubarb, ₱ box	80	@1 50
Squash Summer, ₱ box	1 00	@1 25
Squash and Pumpkin, ₱ ton	—@—	
Tomatoes, ₱ crate	50	@1 00

POTATOES.

The market was heavily stocked with table potatoes of fair to good quality, and there was a decidedly weak feeling, shading of rates in favor of buyers being the rule rather than the exception. A few extra select Burbanks brought higher figures than were warranted as quotations. Oregon Peerless commanded tolerably good prices for seed purposes. Oregon Garnet Chile ruled fairly steady, with offerings of same not specially excessive. Sweets were offered quite freely and at reduced rates.

Burbanks, River, ₱ cental	25	@	60
Burbanks, Petaluma-Tomales, ₱ ctl.	35	@	60
Burbanks, Salinas, ₱ cental	——	@	——
Burbanks, Oregon, lb cental	60	@	85
Early Rose	80	@	90
Garnet Chile, ₱ cental	75	@	90
Peerless, ₱ cental	85	@	1 00
Sweet Potatoes, Yellow, ₱ cental	50	@	75

The Fruit Market.

FRESH FRUITS.

Apples are offering out of cold storage in fairly liberal quantity for this advanced date, but there are scarcely any now coming forward from interior. Values show much the same wide quotable range as for some time past, with market very firm for select table fruit and weak for common and defective qualities. Advices from Strawberry sections warrant anticipating this fruit in quotable quantity at an early date.

Apples, fancy, 4-tier box	1 50	@	2 00
Apples, good to choice, ₱ 50-lb box.	85	@	1 00
Apples, common to fair, ₱ 50-lb box.	50	@	75

DRIED FRUITS.

There is a saying that the unexpected always happens. The unexpected has certainly happened this week in the prune market. Only a few days ago it was reported that the Asssociation would likely reduce prices, and many connected with the fruit trade felt confident that the card rates of the Association would be marked down, to be more in keeping with the recent values current on non-Association stock. While the trade was awaiting a definite decision from the Association, considerable movement developed in non-Association prunes at low figures. Then came the announcement that the Association would maintain previous rates, the discovery being made at the same time that practically all the non-Association prunes had passed from first hands. It is supposed that most of the prunes sold the past week at cut rates were secured by the Association. At all events, the wholesale market is bare of non-Association prunes, and there is a decidedly firmer feeling. Now that the Association has control of the stocks unplaced, and has given assurance that current rates will be maintained, it is believed that buyers will take hold more freely. There is certainly a more hopeful and healthy condition of affairs as regards prunes than a week ago was thought possible of development in such a short time. In other dried fruits there has been little movement, and such transfers as were effected showed the market to be decidedly weak for apples, and without quotable improvement for other kinds. Some poorly cured pears went at less than inside quotations.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½	@	6
Apricots, Royal, choice, in sacks, ₱ lb	6	@	6½
Apricots, Royal, fancy	7	@	8
Apricots, Moorpark	9	@	10
Apples, in 50-lb boxes, rings, pressed, fancy	4½	@	5
Apples, 50-lb boxes, rings, pressed, good to choice	2½	@	3½
Figs, White, fancy pressed	6	@	7
Nectarines, ₱ lb	4	@	6
Peaches, unpeeled, fancy	5½	@	6
Peaches, unpeeled, choice	4	@	4½
Peaches, peeled, in boxes	11	@	14
Pears, unpeeled Bartletts, halved, fancy.	5	@	6
Pears, halved, unpeeled Bartletts	3	@	4
Pears, quartered, unpeeled Bartletts	3	@	4
Plums, Black, pitted	4	@	5
Plums, White and Red	5	@	6
Prunes, Silver	4½	@	6

COMMON SUN-DRIED.

Apricots	3½	@	4½
Apples, sliced	2	@	2½
Apples, quartered	2	@	3
Figs, Black	1½	@	2½
Figs, White	2½	@	3½
Peaches, unpeeled	3	@	5
Pears, prime halves	2	@	3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ½c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

Business in raisins has not been lately of heavy volume and has been mostly in seeded. The special export rate of 3c for 3-crown standard loose Muscatel will likely result in a free outward movement of this class of stock.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ₱ 20-lb box	3 00	@	—
Dehesa Clusters, 5-crown	2 50	@	—
Fancy Clusters, 4-crown	2 00	@	—
London Layers, 3-crown, ₱ box	1 60	@	—
do do 2-crown, ₱ box	1 50	@	—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ₱ lb	—	@	7
Loose Muscatel, 3-crown	—	@	6½
Loose Muscatel, 2-crown standard	—	@	6
Loose Muscatel, seedless	—	@	6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ₱ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ₱ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Much the same state of affairs prevails as during preceding week. The orange market is glutted with low grade fruit, while choice to select is in very moderate supply. Values are ruling steady for best qualities, but market is weak and prices are irregulor for common stock. Lemons of desirable quality are selling to fair advantage, while the more common grades are offering at fully as low values as have been current at any time this season. Limes continue in very limited supply and are commanding firm figures.

Oranges—Navel, ₱ box	75	@	2 00
Seedlings, ₱ box	65	@	1 25
Tangerines, ₱ half box	75	@	1 25
Grape Fruit, ₱ box	75	@	1 50
Lemons—California, select, ₱ box	2 25	@	——
California, good to choice	1 50	@	2 00
California, common to fair	75	@	1 25
Limes—Mexican, ₱ box	8 00	@	——
California, small box	——	@	——

NUTS.

Almond market is quiet and lacks firmness, although there are no large quantities offering. The wholesale market is practically bare of Walnuts, especially of No. 1 to choice stock. Values on Peanuts are being well maintained,

California Almonds, shelled	18	@	22
California Almonds, paper shell, ₱ lb	12	@	13
California Almonds, soft shell	9	@	11
California Almonds, hard shell	6	@	7
Walnuts, White, soft shell	8	@	11
Walnuts, White, California, standard	7	@	10
Peanuts, California, fair to prime	4½	@	5½
Peanuts, Eastern, hand-picked	5¼	@	6
Pine Nuts	5	@	6

WINE.

There have been no new developments since date of last report. Market remains firm, with every prospect of so continuing through the balance of the season. Dry wines of 1900 vintage are quoted at 19@22c. per gallon, with offerings light. Some holders are asking above quotations. The Panama steamer sailing on the 8th inst. carried 200,941 gallons and 29 cases wine, destined for New York. Considerable wine is going forward to Eastern points by rail. A sale of 60,000 gallons Napa county wine, last year's vintage, is reported at 21c., delivered here.

California Dried Fruit at New York.

NEW YORK, March 13.—Evaporated apples, common, 3¾@4¾c; prime wire tray, 5@5¾c; choice, 5½@6c; fancy, 6@7c.

California Dried Fruits.—Moderate trade doing, but at generally easy figures.

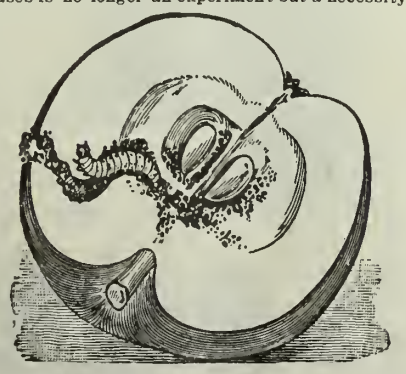
Prunes, 3¼@8c.

Apricots, Royal, 7½@12c: Moorpark, 8½@14c.

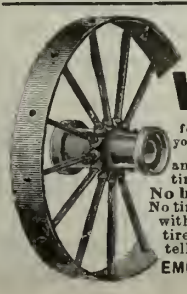
Peaches, unpeeled, 6½@10c; peeled, 14@18c.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had for the asking



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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	147,918	4,500,714	4,322,922
Wheat, centals	99,687	5,742,894	4,851,960
Barley, centals	27,305	3,071,927	4,429,641
Oats, centals	8,120	543,256	629,738
Corn, centals	4,855	86,339	97,909
Rye, centals	600	104,522	91,150
Beans, sacks	9,246	521,305	326,467
Potatoes, sacks	37,157	1,220,071	957,040
Onions, sacks	2,351	145,296	135,258
Hay, tons	2,760	122,078	119,320
Wool, bales	271	23,565	36,408
Hops, bales	276	7,183	9,256

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	113,628	2,577,378	2,907,184
Wheat, centals	322,090	5,656,380	4,308,781
Barley, centals	104	1,841,040	3,522,407
Oats, centals	...	47,561	34,223
Corn, centals	...	2 269	14,317
Beans, sacks	214	10,779	21,495
Hay, bales	...	82 579	101,519
Wool, pounds	...	409,631	4,112,407
Hops, pounds	555	531,638	945,861
Honey, cases	15	1,657	3,340
Potatoes, packages	9,350	108,793	59,509

Of Interest to Horse Owners.

No doubt very many of our readers have used and are well acquainted with the old reliable veterinary remedy, Kendall's Spavin Cure, which has been regularly advertised in our columns for a number of years. There may be many among our new subscribers, however, who have not heard of it. It is manufactured by the Dr J. R. Kendall Company of Enosburg Falls, Vermont, and has been upon the market more than a quarter of a century. There is no nook or corner of the United States or Canada where it is not well and favorably known and used. It is also used extensively in Australia and almost every country on the globe for the treatment of spavin, ringbone, splints, curbs and all forms of lameness, equally effective in treating bruises, sprains, soreness, etc. While it was prepared and put out as a veterinary remedy and specially recommended as such, its friends and users say it is good for lame back, inflammation and swelling of any kind, rheumatism, etc. The Kendall people issue "A Treatise on the Horse and His Diseases," which treats in a concise way of about all the ailments and diseases that horses are liable to suffer from under ordinary conditions. The book is illustrated with over 80 cuts, which aid quite materially in diagnosing and treating diseases. There is a long list or table of doses which is most valuable, as it gives the name of the drug, its action and use, size of the dose, and the antidote. It contains a chart and full descriptirn for determining the age of a horse by the appearance of the teeth. There are other things of interest and value to horse owners. The Kendall people will mail a free copy to those of our readers who w sh it.

IN La Crosse, Wisconsin, is located the large farm seed growing establishment of the John A. Salzer Company. Last year they introduced a three-eared corn. This year they bring forward Salzer's Early Golden Yellow Combination Dent Corn—early, big-kerneled, long-eared, big-cropping variety. Salzer's catalogue tells all about it. It costs but 5 cents postage.

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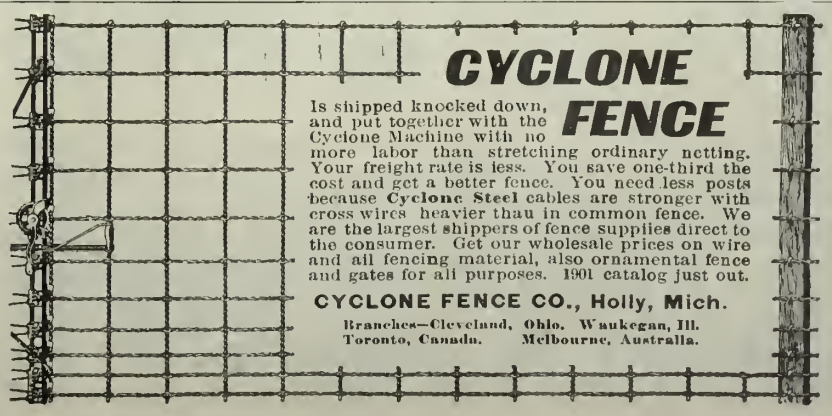

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THE POULTRY YARD.

Thoroughbred Poultry.

By A. T. LINDGREN of Kingsburg, at the Hanford Farmers' Institute.

The subject of thoroughbred poultry is of such wide scope and embraces such a number of distinct varieties, that to do it justice would require not only more time than can be allotted to it here, but it would take a book of no small dimensions to contain a description in detail of each breed. Therefore I will touch only on a few points that may be of interest, and will try, as best I can, to establish the fact that thoroughbred poultry is more profitable than the common chicken. What, then, are the advantages of pure-bred poultry? There are two standpoints from which to consider them—beauty and utility.

In this busy, hum-drum world, with its work and worry, we are too often blind to the beautiful—rushing along with our eyes closed to the beauties of nature, the wonderful creation of Him who rides upon the clouds and who made the wonders of nature for the pleasure of mankind. In this we not only sustain loss, but we rob life of a great deal of its attractiveness. By making our surroundings pleasant, we not only create pleasure for ourselves, but enhance the happiness of others.

It is with a degree of satisfaction we note the home where stately palms rear their heads, creeping roses festoon the veranda, and where various kinds of trees with their varying shades of green invite the tired traveler to repose in their welcome shade. But have you ever noticed how out of place a lot of mongrel chickens are in such surroundings?

The speckled rooster scratches busily and clucks and calls his brood of hens, of such a variety of colors that it baffles description; of different sizes and types of various kinds. In some specimens, black and white are at war over which shall have precedence; in others, red, black, white and yellow vie with each other in making odd and fantastic coloring.

How vastly more in keeping with such surrounding is a flock of pure-bred poultry! Take, for instance, the well-bred Barred Plymouth Rock, with their mellow shade of gray, with distinct black markings. The old king of the poultry yard gallantly takes the kernel of corn or wheat in his bill and with an enticing note calls to his queens, who come rushing and cackling—what a wave of gray, topped by combs of brilliant red! Surely the owner of such a flock has reasons for feeling satisfied with his poultry.

Or if the type happens to be White Leghorns, even from a distance you note their beautiful white plumage in striking contrast to the dark green foliage of the trees. A flock of a hundred or more White Leghorns is indeed an inviting sight.

There are many other grand varieties worthy of mention, but I will only refer to one other—the Buff Leghorn, a comparatively new breed, but one worthy of more than passing notice, resembling, as they do, more than anything else, gold nuggets from the frozen fields of Alaska or the picturesque mountains of California. The miser may stack his gold with eyes glistening at the metallic clink of the coin, but richer in my opinion is he who, appreciating the beautiful, can live in contentment. Even in beauty of coloring can the Buff Leghorn vie with the golden eagles and half eagles with their mellow golden buff. Ah! how it delights the heart of the true poultry fancier to caressingly run his fingers among the feathers of a prize Buff Leghorn, revealing a golden deep undercolor, and to feel that you have produced something better than the average is indeed satisfying. Nothing so enlivens the appearance of a city lot as a bunch of pure-bred poultry. So, to the city residents, this point alone should give a better class of poultry a place in your plans for beautifying and enhancing the home.

Has standard-bred poultry any value from the utility standpoint? For, however beautiful a thing may be in this prosaic world, we must cultivate the useful and produce that which will help us meet the demands of practical every-day life.

Poultry must necessarily be divided into two classes—market and egg-producing varieties. We often speak of the all-round fowl, but one thing seems certain, and that is that the egg-producing breeds with the same care will outlay those of the market variety. Perhaps the best market variety we have is the Plymouth Rock, barred, buff or white. They are easily raised, are ready for the market at an early age, and ready for shipment at an age when heavier varieties consist mostly of long necks and shanks. They make excellent capons and when sent to the market, being of a uniform color and size, command the highest price. It takes no more to feed them than the mongrel, they lay fully as well, hence they must be more profitable.

The best egg-producing breeds are those which belong to the Mediterranean and Hamburg classes. Of these we will mention only a few.

The breed that lays the largest white egg is the Minorca, and as to size they are not such a great way below the Plymouth Rock, cockerels weighing two and hens and pullets one and one-half pounds less than the Plymouth Rocks. They are first-class layers and if weight of eggs is considered they undoubtedly take the lead.

The Leghorn varieties are so well known that but little need be said of them. But for egg production they are unsurpassed. Being non-setters, they do not waste their time trying to hatch the china nest egg, nor are they found sitting in the mangers and other undesirable places, as is the case with the scrub. Their merry cackle may be heard day by day, apprising you of the fact that they are increasing your daily income. Being of a lively and industrious disposition, they require less care than heavier breeds. They do not need a scratching shed on account of getting too fat, and they will do better on a grain diet such as most farmers give their poultry.

At last I wish to say that, taking beauty and usefulness into consideration, they far surpass the common barnyard poultry, and when these two cardinal virtues are found in such a high degree it is unwise to continue in the same old line, allowing the old hen to hatch out her vari-colored inbred batch of youngsters that grow up into the least profitable class of chickens. I fully believe that if the poultry raisers of this community would raise a better class of poultry it would make them richer as well as happier.

At any rate, the hens of the United States, though usually the most neglected of the farm stock, are often the ones that pay the grocery bill, and in many homes make it possible for the family to make a good living.

May the day soon dawn when the poultry of California may attain the prominence and acknowledgment they merit.

Beware of Ointments for Catarrh That Contain Mercury,

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

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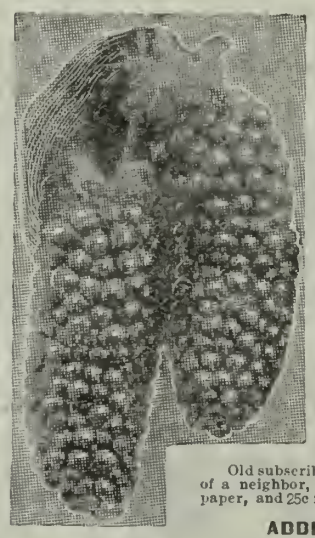

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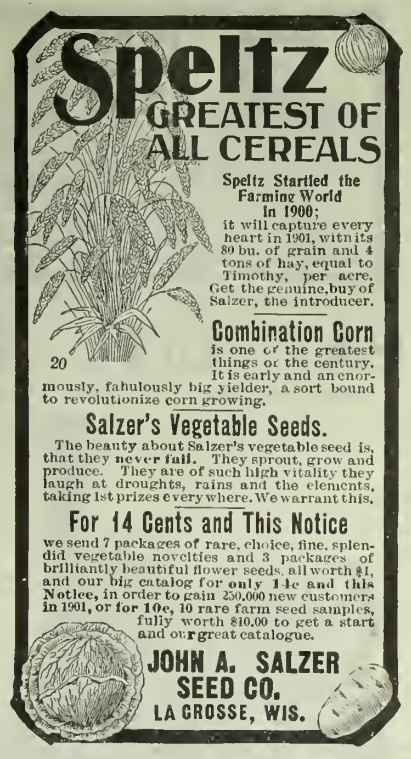

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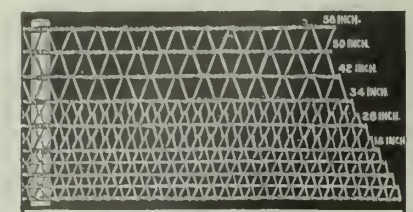

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Stockton Grange.

To the Editor:—Stockton Grange had quite an eventful meeting on the 2nd of this month. There was the usual amount of routine business to transact, also the acting upon of several sets of resolutions. One from San Jose Grange, inviting our Grange to endorse the appointing of Bro. G. W. Worthen, our efficient Master of the State Grange, by the Governor to the board of trustees of the State Normal School at San Jose, did not need any discussion, receiving a unanimous vote, with a good will.

A resolution received from Bro. Taylor, Lecturer of the State Grange, on the mismanagement of the Board of State Harbor Commissioners, was thoroughly discussed, as was also the circular from Sister Sanders, chairman of the Committee on Woman's Work. As there were so many topics embraced, it was thought best to leave it in charge of our worthy Lecturer, to be brought up at future meetings.

The Grange was highly honored by the presence of the Master of the State Grange, Bro. Worden, and the Deputy Master for this county, Bro. J. D. Cornell of Sacramento, besides visiting members from the baby Grange, Castoria Grange of French Camp, this county.

Bro. Worthen spoke at length on the progress of our Order, both here and in the East, and stated that he was well pleased with the number of new Granges organized throughout the State, and also quoted from articles by Bro. Kelly, founder of the Order, and the late Bro. Saunders, which he received while attending the last meeting of the National Grange. He also made remarks on co-operation and education among Patrons and farmers generally. The members of this Grange were well pleased with his remarks and hope for another visit in the near future.

Bro. Cornell also spoke on the welfare of the Order and seems very enthusiastic in his work as deputy. His accomplishments are many and success will surely crown his efforts.

Sister C. E. Overhiser, who was unable through sickness to be present at our installation, was installed as Chaplain, this pleasing duty being performed by Worthy Master Worthen, whose feeling remarks before giving the obligation were fully appreciated by the members of this Grange. Sister Overhiser is known by most all who attend the sessions of the State Grange and needs no introduction from us. She is constant in her attendance and performs well the duty that pertains to the office of Chaplain. Her activity and interest in the welfare of the Order and all good works should prove an incentive to younger members in the Grange to follow in her footsteps.

N. H. Root, Secretary.

Oakland Grange.

To the Editor:—Oakland Grange held a very enjoyable meeting on the evening of March 2nd, when the remaining officers were duly installed and the first and second degrees conferred on a class of four, after which a dainty collation was served by the ladies in the banquet hall.

We were favored with a visit from Worthy Gate Keeper Hopkins, who ably assisted us in the work. Nita.

Oakland.

Oregon Horticultural Report.

We are indebted to Hon. H. E. Dosch of Portland for a copy of the report of the Oregon Board of Horticulture for 1901. It is a splendid document of nearly 500 pages and is a great credit to the active fruit growing interest of our sister State. It not only contains very full statements of what Oregon growers are doing, but has many matters of universal interest to growers. Secretary Dosch is tireless in his promotion of his chosen interest and he is a very active and effective apostle of co-operation for marketing and for making local products better known to the outside world of consumers.

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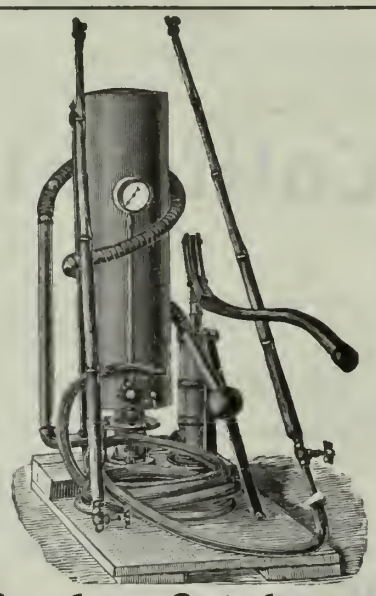

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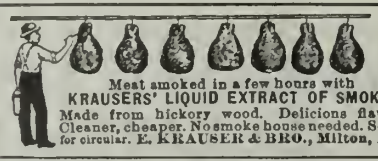

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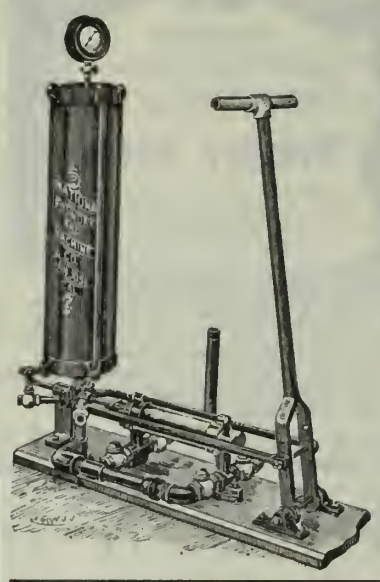

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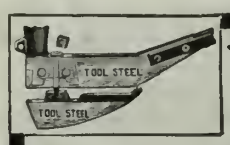

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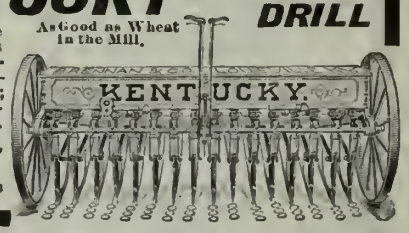

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FRUIT MARKETING.

The Fruit Shippers' Association.

To THE EDITOR:—A general meeting of fruit growers of Newcastle and vicinity was held this afternoon in Newcastle to consider the question of forming a local Association, to be auxiliary to the State Fresh Fruit Growers' Association. Mr. E. I. Galvin, president; Mr. T. W. Madeley, secretary, and Mr. Geo. H. Cutter, the executive committee of the State Association, were present by invitation and addressed the meeting. These gentlemen had been to Newcastle before and presented the objects and plans of the new State organization. They have held meetings at Florin, Placerville, Fair Oaks, and report much interest manifested on this subject and at each point steps taken to form local auxiliary organizations.

They reported that extended correspondence had been had with the Southern California Fruit Exchange and the Semi-Tropic Exchange of Los Angeles through O. B. Olufs, president; with Fresno Deciduous Fruit Association, also correspondence with prominent fruit growers of Vacaville, Marysville, Lodi, Yuba City, Chico, Sacramento River section, Walnut Grove and Courtland.

The lack of funds only had prevented more work at distance on part of the executive committee.

At Florin, the members of the former local organization have agreed to make it auxiliary to this new State organization.

President Naftzger of the Southern California Fruit Exchange of Los Angeles has offered the State Fresh Fruit Association the benefits of all their large number of Eastern agents to act entirely in the interests of the Fresh Fruit Association during the summer months. They are thus assured of a large, trained corps of assistants already organized and conversant with details of the Eastern fruit markets, and this will be of great assistance in Eastern shipments.

Mr. Reid, secretary of the Semi-Tropic Fruit Exchange of Los Angeles, has written the Fresh Fruit Growers' Association to the same effect, and the new Association is in a position to go right to work to begin the shipment of fresh fruits this season. All that is lacking is the active co-operation of all the fruit growers themselves and their failure to come forward and sign the necessary contracts with the new Association. At the organization of this new State organization, thirty-seven of the seventy-six present were from Placer county, and thirty-nine others represented Fresno, Sutter, Butte, Sacramento, Yuba, Yolo, San Joaquin and El Dorado counties.

The meeting this afternoon was organized by electing Chas. H. Kellogg chairman and J. F. Madden secretary. After extended interesting addresses by E. I. Galvin, Mr. Cutter, and Mr. Madeley of the Fresh Fruit Growers' Association, many questions were asked by fruit growers present and answered satisfactorily by the committee. Remarks were made by Mr. Sherman, Mr. Varden, Mrs. Caldwell, Mr. L. L. Crocker and Maj. G. W. Ingalls, the latter representing the PACIFIC RURAL PRESS.

The result of the meeting, as indicated by expressed opinion of a majority present who signed membership cards and paid the membership fees, was that as soon as a more complete canvass was made for membership, the local organization would be completed in a few days. The success of the meeting was very gratifying to the committee representing the Fresh Fruit Growers' Association of the State, as well as to local fruit growers.

Newcastle, March 9, 1901. G. W. I.

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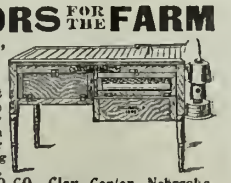

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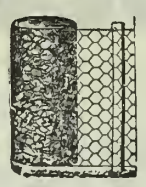

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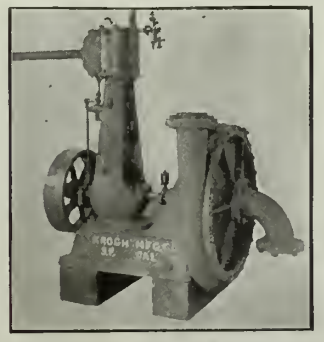

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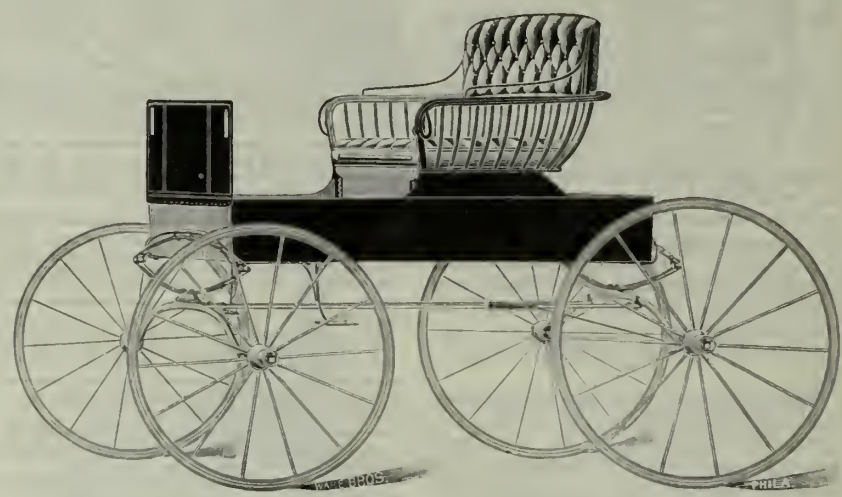

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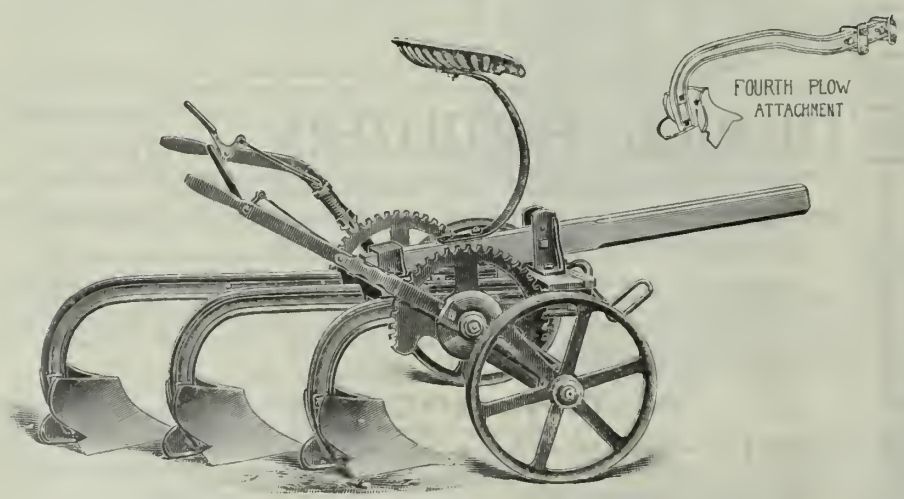

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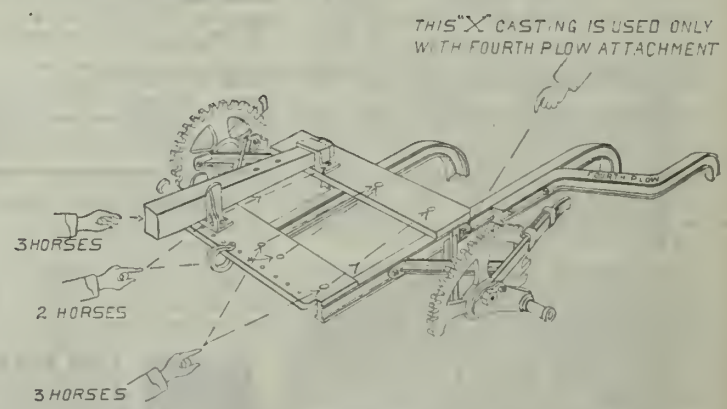

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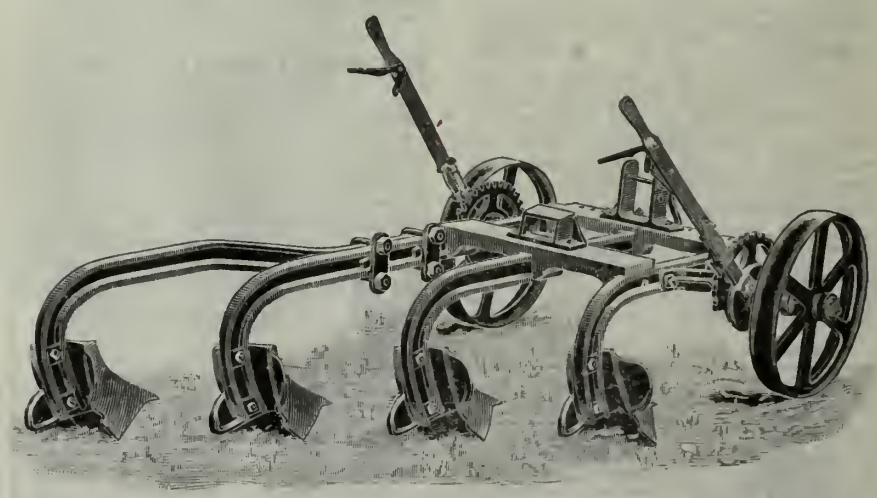

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 12. SAN FRANCISCO, SATURDAY, MARCH 23, 1901. THIRTIETH YEAR. Office, 330 Market St.

Desert Rivers.

The two rivers shown on this page strike us as particularly interesting because they flow in a part of the State which is not supposed to display much river scenery, viz., the Colorado desert. They are, in fact, both of them, branches of the Colorado river, the famous canyon maker of the Southeast. This Colorado river is greater than people commonly think. It rises in Wyoming, about 3000 miles from its outflow, in the Gulf of California, and it takes water from Wyoming, Colorado, Utah, New Mexico and Nevada before it reaches its boundary business between California and Arizona. It carries an immense amount of water at some seasons of the year, and sometimes goes on a reclamation enterprise of its own and makes an inland sea on the Colorado desert. The pictures of these branches of the Colorado strike us as especially interesting because there is now being developed, in the extreme southeast of California and in adjacent lands in lower California, a project for a very large reclamation of wild arid land by means of diversion from the Colorado river. The Sunset Magazine recently gave a sketch of the country and the enterprise by W. E. Smythe of Los Angeles. The proposition includes hundreds of thousands of acres of alluvial lands, which the Colorado distributed in its prehistoric meanderings. To restore to these lands the waters of the stream which deposited them will be to render available the vast fertility which they have retained through cycles of arid conditions. The first tract to be reclaimed will be 100,000 acres in eastern San Diego county, between New river and Carter river. It is all government land, and is available under desert and homestead land laws, and is to be taken from the Government by each settler and rendered irrigable by the company, which brings the water from the Colorado river. If the early effort succeeds the venture will proceed upon the vast domain which is available, and it may be that even within a few years large farming, and grazing interests may spread over the silent wastes. It is a very interesting proposition, and one which we should like to see succeed.

The Carter River, a Branch of the Colorado in Southeastern California

The Padroula River, Another Branch of the Great Colorado.

Less attention is being paid to watermelons in and about Lodi. This year there will not be more than 300 acres at the outside.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, March 23, 1901.

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The Week.

It is already getting a little dry in spots in California, and short hay will result unless showers come soon to give the plants another lift. This is especially the case at the south, where the thirsty earth had particular need of deep wetting. Otherwise things are looking very well, as is shown in detail in the Weather Review on the opposite page. Frosts are shy thus far, and though, according to our own observation, the set of fruit is not excessive, there is a good amount in sight in most places. If the need of thinning should be less than usual, it will please growers just as well.

The markets show considerable activity and some interesting fluctuations in value. Wheat has had a firmer tone here, and the conservative hold that it is chiefly in options and that it is a squeeze for the shorts. The Eastern market is, however, a little better than last week, and the foreign situation today is somewhat mixed. One wheat cargo has cleared, and another largely barley has gone out. Loading for the Mediterranean and on owners' account accounts for two ships more. Shipping barley has been quiet for lack of movement, and the lack of screenings has helped feed barley, which is put $1 higher per ton. Oats are quiet and unchanged, and it does not help the local market to see Eastern oats coming in by rail for Government shipment to Asia. Corn is quiet and steady. Beans are stationary, though some interest in white beans is encouraged by coming bids for Government purchase. Colored beans are not in it. Hay is unchanged—all weak but fancy. Beef is firm and unchanged; mutton is lower and hogs are holding steady. Some dairy hogs are arriving. Eastern receipts are shut off because values are too high now at the sources of supply. Butter holds last week's prices, with a fair movement. Cheese is also moving well at old prices. Eggs have gone up 1 to 2 cents per dozen and buying active in near-by country centers. Poultry is stiff and high for all but turkeys, which find but little inquiry. Eastern poultry has decreased in volume, and good local prices are expected for several weeks hence. Ducks are almost out of sight—even up to $10 per dozen and hard to get. Potatoes are slow and no improvement in movement or price. Australian onions to the amount of 2200 crates have arrived and the market is weak. Citrus fruits are unchanged. The first strawberries have arrived. There is very little doing in dried fruits. The prune people are said to have secured still more outside fruit and thus repaired their fences. The advertising measures are being vigorously pushed, but it is too soon to feel the effects yet. Nuts are quiet. Honey is weak, while waiting for the new crop. Some wool is selling in the upper San Joaquin and a few lots here, but the market is quiet and unchanged.

The late Legislature finally passed a fertilizer control law which is decidedly unique. California has long been about the only State which did not have an enactment to help farmers to secure the worth of their money, and now, if the Governor does not veto it, there will be a law which rules out of supervision all slaughter house products, which are notably variable in their composition and need holding up to fair standards, if anything does. There was also a reduction in the fees, which will make it very difficult to carry out the law, and, finally, the whole operation of the law is postponed until a year from next July. The new law seems to be a studied effort to show how not to do it. The only possible consolation in the situation may be that it is better to have some law than none, and easier to amend a defective law afterwards than to get an original enactment. At present, however, there does not seem to be enough in the matter to care much about.

We presume many people will be satisfied with Governor Gage's veto of a measure appropriating $107,000 for irrigation and forestry work in this State in co-operation with the several interested departments of the general government. Naturally, progressive measures which will come some day will now be postponed. It seems fair to conclude that, in spite of the excellent work of the Water and Forest Association in the effort to popularize their plans, there were still many people who were not convinced of the wisdom of proceeding so soon on so large a scale. We are of the opinion that really haste could have been made more slowly, and that a smaller appropriation the first year would have encountered less opposition and still have been adequate for a good deal of desirable work. This reflection is, however, of little account now. The measures which will bring development and progress to this State are not dead—they are simply delayed. Work will still be done and a better foundation laid for the future. The people will better appreciate the promise in the work. Meantime we shall get a generous share of the appropriations by the general government for forestry, irrigation investigations and hydrographic surveys, and shall know better what we need two years hence.

Dairy school legislation died in the Senate probably in the view that with the new appropriations for the University the Regents will be able to open a dairy school and demonstrate the demand for that special line of educational work. We believe the Regents will do this and make as good a beginning as possible under the circumstances. It is likely that we shall have this matter outlined in President Wheeler's announcement for the coming fiscal year, and from the active interest in the matter which he has always manifested it is reasonable to expect something very good and creditable. While the project is, then, taking form, it is impossible to secure definite information. We are sure, however, that the work will be pushed and announcement of details will be made as soon as possible.

We are glad that the putting up of Eastern fruit under California labels is likely to be stopped forthwith. No less than thirteen perpetual injunctions against Baltimore fruit packers, and in favor of the California Fruit Canners' Association, have been granted in the United States Circuit Court. The decree signed will perpetually restrain the defendants "from selling or offering for sale peaches or pears, not the product of the State of California, to the can or other vessel containing which the word 'California' is or shall be affixed, or selling the same with the intent that such label or false representation shall be thereto affixed." That is good doctrine.

Oranges are trying to escape by a new route via the Great Northern Railway, in connection with the Pacific Coast Steamship Company. A trial shipment of fourteen carloads is on the steamship Umatilla, which will arrive at Seattle on Sunday. Fourteen large refrigerator cars, with engine attached, will be waiting at the dock. The train will average 25 miles an hour to St. Paul. The estimated time from Seattle to St. Paul is less than four days.

QUERIES AND REPLIES.

San Jose Scale in Japan.

To the Editor:—I note in the last Pacific Rural Press a reference to Mr. Marlatt's going to Japan to see the San Jose scale. You will be interested to know (by the copy of Science of March 8 sent herewith) that California has already done something toward finding out about this scale in Japan. Mr. Kuwana is now at work on a paper describing and listing about eighty species of scale insects (about twenty of which are new species) which he collected in Japan last summer.—V. L. Kellogg, Stanford University.

We are very glad to have this note from Prof. Kellogg and the advance sketch of Mr. Kuwana's work to which he alludes. From the latter we learn that the Japanese are claiming that California is the native place of the San Jose scale while we are trying to award the doubtful honor to Japan. Prof. Kellogg says that with this issue in mind and with the further thought of the desirability of finding an effective natural enemy of the San Jose scale, Mr. Shinkai I. Kuwana, Assistant in Entomology at Stanford University, spent all last summer in Japan collecting and studying in the field the Japanese scale insects (the first attempt at a systematic investigation of the Japanese Coccidæ), paying special attention to the San Jose scale. Mr. Kuwana's collections are large, and his notes many and interesting. His familiarity with the language, the customs and the geography of Japan gave him special advantages in the work. He visited all the large islands of the empire, penetrating into the interior among the mountains, as well as examining the coast-line orchards. He was greatly aided by Japanese naturalists and fruit growers, and altogether was able to make an extended reconnaissance.

As a result of this exploration it is certain that the San Jose scale is widely and commonly distributed over the whole empire of Japan (excepting on the island of Shikoku), though in but few places is it a serious pest. It is found on the following hosts: pear, apple, plum, peach, Japanese quince, currant, willow and pæonia. It is found especially common in young orchards where its chief injuries are done. It is present in certain of the very old interior orchards, where it has been known, under the name Ki-Abura, for more than thirty years. It is attacked by several enemies, Mr. Kuwana personally finding one chalcid fly, three ladybird beetles and one moth, the larva of which feeds on the scale. Of these enemies the chalcid fly and one of the ladybird beetles are everywhere common, and are effective checks to the increase of the scale. It is probable that the comparatively little injury produced by the scale in Japan, widespread as it is, is due to the presence of these natural enemies. The artificial remedies used in Japan against the scale include "soap water," solution of caustic soda, and kerosene. The soda solution (one pound caustic soda to ten gallons of water) is applied with cloths and the trees then washed with pure water. The other insecticides are applied with a Japanese paint brush. After a rain the fruit growers go into the orchards with ropes or cloths and rub off the scales while wet.

Prof. Kellogg concludes that Mr. Kuwana's observations point strongly to the Japanese nativity of the scale, or at least to its inhabitancy of Japan prior to its brilliant career in North America. It must be noted, however, that the scale was not found strictly "wild" in Japan; that is, it was not found on any wild (uncultivated) tree in its natural habitat. The willow trees found infested with scales were in the ground of the Government Forestry Station at Nishigawara. The scale was, indeed, found on mountain (or wild) pear trees, but these trees were in or near an old apple orchard.

Growing Lilacs.

To the Editor:—Is there anything upon which I can graft lilacs to that will not sprout so badly?—E. L., Alameda county.

The lilac is sometimes grafted on the ash or the privet (ligustrum) but is said to be not long-lived. Beyond these we do not know of other stocks being used. Suckering of lilacs can be largely avoided by grafting on lilac seedlings, but it is so much easier to propagate by using suckers that most plants are grown in this way. Suckering may also be reduced by carefully cutting out all the dormant buds you can

find on the base of the plant and the roots before planting out. But, after all, there will probably be suckering to care for, and, if one removes the earth down to the main roots, and cuts off all suckers with a little of the bark at the point of attachment, they will grow less in number and finally disappear as the plant reaches size. To cut off the suckers with a spade is to prepare for the starting of many more afterward.

Mites Unharmed by Fumigation.

To THE EDITOR:—The PACIFIC RURAL PRESS a week or two ago had an enquiry about fungus on guavas, which was pronounced the work of mites. You advised spraying unless the foliage was too thick, in which case you advised cyanide. My experience is that the cyanide does not kill these mites. There are many orchards in the south that have been fumigated for black and red scale, and where good work was done for the scale, but trees were infested with the mites before and after the fumigation.—S. M. WOODBRIDGE, South Pasadena.

This is important. Is it true that active mites can go through cyanide fumigation? We would like to have further observation on that point. We would be disposed to concede, theoretically, the immunity of the eggs of the mites, and there might then be active mites just before and a little after fumigating, for they come out in continuous procession during the warm weather. It seems incredible that an insect which is readily killed with water, and which succumbs to sulphur vapor largely mixed with air, as it must be when sulphur is vaporized in the open by sun heat, is not hurt by cyanide. The test, however, is the fact and not otherwise, and we would like wider observation. Of course, Dr. Woodbridge's point is practically established, even if the fumigation does not kill the eggs, because one cannot fumigate each day for a new brood of mites. It may be that the guavas must be sulphured or sprayed, and that seems almost impossible, unless the bushes are freely thinned out beforehand.

Weed Growth and Frost in Orchards.

To THE EDITOR:—Is a heavy growth of burr clover and grass under prune trees any protection against frost injuries to the bloom and young fruit? It becomes very wet with dew and this I apprehend might arrest the drop in temperature somewhat. We have had the thermometer down to 30° and no harm has been done, and I am wondering whether it would not be a good plan to allow the weeds to remain until the middle of April instead of plowing them under in March. Last year the prune crop was frozen April 9 but the ground had been plowed in March.—READER, Alameda county.

The presence of the cover of wet vegetation which you describe will work against the freezing to a certain extent: if the general temperature does not drop too low or is not too long maintained at a low figure the specific heat given out by the cooling of the water will prevent the drop of temperature of the adjacent air to a killing degree. There is abundant observation to show that fruit over wet ground or over wet vegetation has escaped injury while that over dry ground has suffered.

But there is another thing to consider. Leaving a heavy growth of green stuff on the ground to plow under as late as April is apt to prevent good tillage and to keep the soil in such coarse, open condition that it will dry out badly all summer and this may perhaps cause small fruit for lack of soil moisture. This places a limit upon the use of weed-growth as an aid in frost prevention.

Hoarhound.

To THE EDITOR:—Is there any way, except digging up the roots, of getting rid of the common hoarhound? The weed is very troublesome all over the enclosure—which is large and uncultivated—around our house. We have tried digging it up, but there are so many seeds that fall from even one plant, we have been unable to get rid of it. Also, is there a market value to the herb, and do you know the address of any house which buys it? If we can't get rid of it, I would like to turn it to some account, if possible.—A. G., Ball's Ferry.

If you do not desire to break up the ground and keep the growth down by frequent use of the weed cutter, you can use a flat-toothed weed cutter without plowing, running just below the surface, so as to cut the weeds just below the root crown. If you do not desire to disturb the surface as much as this, you will have to go over the piece by hand, cutting each root as far below the crown as you can with a chisel-like blade mounted in a hoe handle, or else cutting off as deeply as you can with a sharp hoe. If you do this early enough, you will have no seed to scatter, and, after that, clean off the ground as new plants appear, never allowing any of them to go to seed. There is no open market for hoarhound. You might perhaps sell some to druggists, if you had it dried and packed in small packages; but regular herb growers and packers with established reputations can easily supply a hundred times as much as there is any demand for. This is true of all common herbs.

For Codlin Moth.

To THE EDITOR:—Will you please publish in the next issue of the PACIFIC RURAL PRESS the best remedy for codlin moth in the apple, and the best time to apply it?—M. C. WINCHESTER, Vallejo.

The best treatment for codlin moth is a careful spraying with good Paris green prepared in this way: Stir one pound of Paris green and one pound of lime into a thin paste with a little water, and when all lumps are rubbed out add this paste to cold water so that the strength shall be one pound of Paris green to 200 gallons of water. Keep it stirred while spraying, so the Paris green cannot settle. The time to spray first is when the petals have fallen and when the little apples are still upright. One spray is often enough for early apples or pears, but later varieties require later sprayings at intervals of about three weeks.

The arsenic preparation given last week for canker worms is a good codlin moth spray. It is difficult to get good Paris green.

Horn Flies.

To THE EDITOR:—Please tell me of some preventive to keep flies off of wounds on cattle, caused by castrating and dewlapping in the regular work on the rodeos. Since 1895 the horn-flies brought in by Southern cattle have overrun California, especially the San Joaquin valley. It used to be possible to dewlap any time, but now it is absolutely necessary to use some preventive—something that it would only be necessary to apply once. Some cattlemen use Monsel's salts and burnt alum, dusting it on. Others use sweet oil and carbolic acid.—OLD SUBSCRIBER, Merced.

We know of no repellant with such lasting effects that one application would answer. Fish oil with a little carbolic acid stirred in has proved most lasting and has retained its effects several days. In the case of a wound the carbolic acid and sweet oil would be better than fish oil. If this could be used and a cloth cover tied over the spot it might remain in place for some time. What do other stockmen do to fight this fly?

Potash for Olive Pickling.

To THE EDITOR:—In the directions for pickling olives given in the PACIFIC RURAL PRESS what potash is used. I have been told it was saltpetre but am still in doubt.—A. G., Ball's Ferry.

It will be better to remain in doubt than to decide on saltpetre, which is potassium nitrate—good for gunpowder and for small use in connection with common salt in pickling meat but of no use whatever in olive pickling. The kind used is caustic potash and the Greenbank brand is most largely employed because of its strength and purity.

Weed Killing on Walks.

To THE EDITOR:—Is there any known chemical that will effectually kill weeds on walks around the house? Is it too late to spray for curl-leaf on peach trees?—SUBSCRIBER, Sonoma.

Common salt is perhaps cheapest and safest to use; but such means of cleaning walks are not in favor, because what kills weeds will also kill desirable plants and will be quickly carried to them by rain or by irrigation. Cleaning with the push-hoe or with a sharp spade, used in the same way, is the only treatment for walks which we have found practicable.

The summer form of Bordeaux mixture (four pounds of bluestone, four pounds of lime and forty gallons of water) will check the spread of curl-leaf, and can be safely used if the fruit has set.

Dipping Prunes Before Packing.

To THE EDITOR:—Will you kindly inform me of the best formula for a dip for prunes? How long should they be left in during the processing, and should the solution be brought to a boiling point? Furthermore, should they be packed warm?—W. E. LOVDAL, Sacramento.

A good formula for prune dipping is: Water, eighty gallons; glycerine, six quarts; glucose, eight quarts. Another—used by some of the most successful packers—is obtained by taking small or slab prunes, suspend them in boiling water and allow the juices to exude. This seems to be as good as anything.

Prunes should be left in the solution from two to five minutes, depending on the size and condition of the prunes.

The solution should be boiling—the hotter the better. Fruit of the nature of prunes will ferment if dipped in cold or even warm water, but the application of a high degree of heat sterilizes it against fermentation.

Prunes should be packed hot. If thoroughly heated and properly drained, they can be packed hot with perfect safety. Prunes if allowed to cool before packing become hard and firm; but, if packed while hot, the slow-cooling process softens the albumen, and they remain soft and pliable for months.—W. C. ANDERSON, San Jose.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 18, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Fair, warmer weather has prevailed during the week, with light frosts in the foothill districts. No rain has fallen since last Monday. All crops have made rapid growth, and farmers have continued work in plowing and cultivating. Grain is in splendid condition, but would be benefited by occasional light showers, as the upper soil is becoming quite dry. Green feed is plentiful. Deciduous fruits are advancing rapidly, and if not injured by late spring frosts will yield heavy crops; apricots, however, are said to be spotted and have commenced dropping in some places. The outlook for large crops of all kinds was never better.

COAST AND BAY SECTIONS.

Warm weather has continued during the week, and conditions have been very favorable for all crops. Frosts have occurred in some localities, but have not caused any damage. The light showers at the close of last week softened the upper soil and were very beneficial to growing crops. Plowing and cultivating are progressing. Grain is in excellent condition, and has commenced heading in some sections; heavy crops are expected, as the acreage is unusually large. Early pears and other deciduous fruits are in full bloom, and give promise of a heavy yield. Vineyards are in good condition.

SAN JOAQUIN VALLEY.

The weather has been favorable for crops during the week, the days having been mostly clear and warm and the nights cool, with light frosts in some sections. Rain at the close of last week was beneficial to grain and grass, which have since grown rapidly and are in excellent condition. Prospects continue good for large crops of wheat, barley and alfalfa. Plowing, pruning and irrigating are progressing, and some summer-fallowing is being done. Pasturage is plentiful. Nearly all varieties of deciduous fruits are in bloom, and give indications of a heavy yield. Grapevines are sprouting and vineyards look well.

SOUTHERN CALIFORNIA.

The weather has continued generally clear and warm, causing a healthy growth of all vegetation and ripening oranges more rapidly than usual. The showers last Monday were very beneficial to grain and grass. Hot, dry winds on the 13th absorbed much of the moisture, and more rain would be welcomed in most sections. Grain is in good condition and is heading in some localities. On the high lands some grain is being cut for hay. Early deciduous fruits are in blossom. Apricots near Anaheim are not thrifty, and a light crop is predicted.

EUREKA SUMMARY.—Gardening is greatly delayed on account of wet soil, but has made progress during the week. Grain continues making rapid growth. Fruit prospects are satisfactory.

LOS ANGELES SUMMARY.—Warm, dry week was unfavorable to grain and pasture, which in most places need rain; some late sown grain is turning yellow. Some hay has been cut. Deciduous trees are generally in full bloom.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 20, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.04	40 14	43.08	34 85	40	58
Red Bluff	.00	22.17	19 67	20 72	39	72
Sacramento	.00	19 01	15 48	16.13	46	70
San Francisco	.00	18 79	17.02	18.87	48	70
Fresno	.00	10 28	7.09	7.35	38	76
Independence	.00	5.80	2.43	4 42	32	68
San Luis Obispo	.00	27.62	14.82	15.27	40	82
Los Angeles	.00	14 10	5.56	14 59	42	84
San Diego	.00	8.56	3.13	8.20	50	82
Yuma	.00	3.60	.76	2.72	44	86

THE PUBLIC LANDS.

The Public Domain and Its Administration.

Everything in connection with the administration and disposition of the public lands of the United States, and of the public domain until it has passed from under the jurisdiction of the U. S. Government, is under the direction and control of the Interior Department, in which, among other bureaus, is the General Land Office, and to which latter division is delegated direct supervision and care. There yet remain in the United States, exclusive of its island ownerships, about 1,000,000,000 acres, which is being disposed of at the rate of about 10,000,000 acres annually. A great portion of this area is still unsurveyed. The sketch on this page illustrates in a portion of this west half of America the proportion of surveyed to unsurveyed land. In general, of the 1,000,000,000 acres of public domain there is about half of that area unsurveyed. Of that half there are about 300,000,000 acres of "desert" or "arid" land to be dealt with by irrigation. Of these 300,000,000 acres about 70,000,000 are declared to be barren and irreclaimable. Discussion of how the remaining 230,000,000 acres shall be reclaimed has resulted in some practical effort, which, so far as the States most interested are concerned, has now come to be a question of who shall do the work, the States or the General Government. Water and forest societies have been working on it in different States and material progress has been made. The question affects the several Western States and Territories to a considerable degree.

There are in California about 17,000,000 acres susceptible of irrigation and reclamation; in Colorado, 8,000,000; in Arizona and Nevada, 2,000,000 each; in Oregon and Washington, 3,000,000 each; in Utah and New Mexico, 4,000,000 each; in Idaho, 7,000,000; in Wyoming, 9,000,000, and in Montana, 11,000,000—a total of 70,000,000 acres. The matter has been before the Legislatures of the several States and Territories and before Congress; its magnitude and extent necessarily make progress slow, but some advance is being made. About one-sixth of the vacant public domain is forest land and of this proportion there have been 47,000,000 acres embraced in thirty-eight forest reserves and there is now pending national legislation which contemplates further absorption of 54,000,000 acres for the same purpose, which, when completed, will place under permanent national control over 100,000,000 acres of forest reserves. The greater proportion of the remaining area may be considered under the general title of mineral land. This simple statement illustrates the vast extent and value thereof, and the immense possibilities in its development and use.

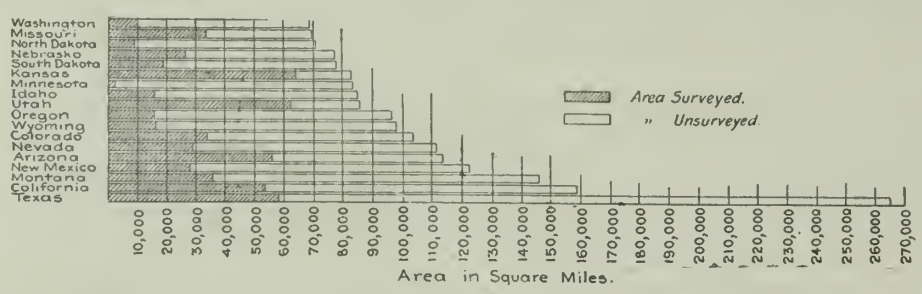

Diagram Showing the Surveyed and Unsurveyed Area of Western States and Territories.

The manner of obtaining public land differs according to the kind and its location. In some of the older settled States all public lands are disposable under private cash entry, though also subject to the homestead law; but this rule does not apply west of the one hundredth meridian. There are some few isolated tracts subject to homestead entry for three years after the surrounding lands have been disposed of, and which can be bought upon filing an affidavit that the lands are not mineral, stone nor timber lands, when, after a public notice and public offer of sale, a tract not exceeding 160 acres can be bought by any one individual bidder. Lands valuable for timber and stone alone can be bought for $2.50 an acre in individual tracts not exceeding in any case 160 acres. The applicant must make affidavit that the land is unfit for cultivation, is bought for his own use and benefit, that there is no bargain to sell it, and that it is non-mineral. Saline lands are purchasable on accepted proof of their being as represented, the manner of sale being at public auction to the highest bidder for not less than $1.25 an acre. This law does not apply to the Territories. In the Pacific Coast States if such lands are not sold in the manner designated they can be bought afterward at private cash entry for $1.25 an acre. Coal lands, while still a part of the public domain, can be bought at a minimum price of $10 an acre, if over 15 miles from a completed railroad in operation, and $20 an acre when at a less distance therefrom, 160 acres being the limit procurable by one person, or 320 acres to an association of any number of persons, with the exception that where four or more persons have proved the expenditure by them of at least $5000 in work and improvement of the coal land they may then enter 640 acres of such coal land.

Additional homestead entries are allowed to soldiers of the United States who served in the civil war of 1861-65 and who made entry of less than 160 acres of land before June 30, 1874, they being allowed to take up such additional amount of land as would complete the 160 acres originally allowable in their case. The Act of Congress of June 4, 1897, allows what is known as a forest reserve lieu land right, which permits holders of lands in forest reserves to relinquish those lands to the Government and to select equal quantities of surveyed non-mineral public land in lieu thereof. Private entries of public lands are also permissible by what is known as scrip, which is receivable for non-mineral land. That scrip has been about all bought up and used, some of it in a manner not contemplated by the Government, as in the case of California oil lands.

A very large portion of the public land that was not granted to railroad companies was taken up under what is called the homestead act, which permits 160 acres or less of non-mineral public land, surveyed or unsurveyed, to be acquired by qualified persons, the only requirements being that they cultivate and improve the land for a continuous period of five years. This, and absorption by the part of the law which permitted similar acquirement of public domain by commutation, etc., has so exhausted resource in that direction as not to require much further reference. It may be observed, however, that the full five years' residence is not required of any one who served for ninety days or more in the army or navy of the United States during the war of 1861-65, and credit to the limit of four years is allowed to such soldier or sailor in that war or the late Spanish war to apply to the five years' required residence. During 1900 there were about 8,500,000 acres acquired under homestead entries.

The desert land law is intended to aid in the reclamation of that part of the public domain concerning which it operates, and is assumed to apply solely to non-mineral and non-timbered land that without artificial irrigation is not susceptible of producing agricultural crops. This law applies to the Territories of Arizona and New Mexico and to the States of North and South Dakota, Wyoming, Utah, Montana, Idaho, Washington, Nevada, Oregon and California, and ordains that bona fide residents of those States and Territories can acquire land under the law, the maximum area to any individual being 320 acres, the price being $1.25 per acre.

HORTICULTURE.

More About Riverside Frost Fighting.

Last week we gave one chapter of frost fighting as brought out by the Riverside Horticultural Club, showing in detail the efficacy of coal baskets in the orchard. Another method is that of burning buckets of crude oil or distillate, and the account of it, with many interesting incidental suggestions, is by Mr. E. A. Meacham of Riverside:

Forecasting a Frost.—I will say a word, by way of preface, about forecasting the weather for any night, which can be done by any person who will provide himself with a suitable instrument. By the use of a psychrometer (a dry and a wet bulb thermometer, mounted side by side), or any device by which the dew point may be determined, one can make quite accurate forecasts of the weather for any cold night.

The method is in no wise intricate and requires but the possession of the instrument and careful exposures and readings. Unfortunately, but very few people take advantage of this method of gaining timely knowledge of danger ahead.

The Weapons.—On the first day of November last I was prepared to fight the cold whenever it might come. The ground was furrowed and irrigated and left, not to be disturbed until spring. Buckets of oil were set in the orchard, twenty to the acre, where the orchard was planted solid; on another five acres, where the trees were scattering, I placed the buckets in each group of trees, so in this orchard the buckets were not massed as they were in the first.

But, above all, I placed my dependence upon the hot water plant devised a year ago. This was tested and found to be in good working order, giving better results than when tried a year ago, on account of using lighter oil for fuel.

During December I kept close watch of the weather and ran unheated water at least eight of the nights. I probably worked harder and worried more than was necessary, but that does not matter now, for I formed a habit which stood me in good play when the cold did come.

We had some nights in December which promised freezing weather, but clouds or change of wind favored us and prevented the damage. Particularly was this true of the night of December 28.

All of New Year's day every sign pointed to freezing weather, and the following night no friendly cloud or warm wind intervened and the results were anything but nice.

I ran water on the day and night of January 1. At 5 o'clock P. M. I recorded the psychrometer reading for dry bulb 45° and the wet bulb 36°, which indicated the dew point to be 22°.

At 8 P. M. the dry bulb showed 37.5°, the wet bulb 31°, still maintaining the dew point at 22°.

At 11:20 the dry bulb read 32° and we commenced operations. We fired the water heater and in fifty minutes raised the temperature of 8 inches of running water from 56° to 100°, and maintained that heat for half an hour, when the unexpected happened, as it often does at the critical point. The injector, which supplies water to the steam boiler, refused to work and would not be coaxed, so, to our dismay, we had to abandon for the night all hope of using this device.

This was very unfortunate, for we lost, in addition to the good it would have done, the demonstration of the principle in actual service.

The Oil Pots.—However, we would not let the matter go by default, so at 12:30 we fired over 100 buckets of oil, partially covering each bucket so that the two gallons of oil in each lasted until 6:30 the following morning. Thus our whole source of artificial heat depended on running water and burning crude oil, which method, while not a model one, paid a big profit on invested labor and fuel.

I spent the last half of the night in taking temperature readings in my own and surrounding orchards, making the rounds in short order, so as to get comparative readings.

I found that the protected orchard had the advantage of from 1° to 2½°. The orchard showing but 1° lower was directly in the drift of the smoke and heat from the oil fires.

One to windward had running water in the furrows. It was 1¾° colder; and another to the windward, unirrigated, was 2½° colder.

I noticed that the smoke over orchards to the leeward hung closer to the trees and was more uniform and dense than on the orchard where the fires were.

From the above I conclude that an owner can successfully protect a single orchard by a method not even the best, and that the owner could, if necessary, well afford to make smudge fires 40 rods to the windward of his own orchard.

Mr. Holmes' Conclusions.—Mr. E. W. Holmes of Riverside also had an interesting paper at the Riverside Club, in which he made these points: The use of water is of unquestioned value in holding the tree dormant and putting the soil in the best condition to prevent the too rapid radiation and loss of heat. Many cling to this as ample, forgetting equal use of water would prevent a sufficient supply for anybody. While of value as an adjunct, it is not a safe dependence, nor alone always sufficient.

I think that where the kindling is dipped in crude oil to insure prompt igniting with kerosene and torch the coal basket is the thing we shall more safely depend upon. The distillate in iron kettles ignites easily and gives greater heat, but on account of the smut it entails its general use is objectionable. To make a cordon of hot fires set close along the windward side of a block of trees, it is of unquestioned value. Where they would not be too conspicuous, prunings and old stumps and logs unfit for stove use could be used for a fire cordon to prevent the downward flow of cold air from the foothills. Such fires can only serve for a single night, and therefore are less to be depended upon than baskets and oil buckets. While I believe any method that creates heat desirable, I think there can be little doubt that for orchard use many small fires creating little upward draft will distribute better the warmth where it is most needed, among the leaves and fruit.

Strawberries in the Pajaro Valley.

The strawberry business in Pajaro valley, says the Pajaronian, is assuming large proportions this spring. Those who have heretofore raised berries are increasing their acreage, and many others who have never grown berries are trying the experiment.

Berry growing has been an extensive industry in this valley for years, although at times the returns have not been very encouraging owing to the limited demand at points which could be reached. Inadequate shipping facilities made it impossible to market berries at distant points, consequently the sales were restricted to home markets, and if the supply exceeded the demand at these latter places, which

was often the case, the profits of the grower were very small.

There is a strong belief among the local berry growers at the present time, however, that a new era is approaching for the berry interests of the valley. The growers have adopted better methods of handling their berries and the railroads have promised improved shipping facilities. It is also believed that the completion of the coast railroad will greatly benefit the berry business, as it will give a direct route to southern California, saving several hours between here and Los Angeles and avoiding the intense summer heat of the San Joaquin valley.

The introduction of the Stuart refrigerator berry crate is another important factor in marketing strawberries in distant cities that has not been overlooked by those who are putting out berries. It is believed that with the new crate no difficulty will be experienced in shipping berries in a marketable condition to points 2000 miles away, provided proper care is exercised in the picking.

The large acreage that is being devoted to strawberries in the valley this spring warrants the belief that berry growers expect a prosperous season for their product. Surveyors have been laying out irrigation systems for strawberry fields nearly all winter and planting is going on all over the valley. The work is progressing nicely. With the new fields which will be planted this spring, it is estimated that there will be a little over 700 acres of strawberries in Pajaro valley. Over 200 acres of old berries were taken out this spring and about 383 acres of new berries were planted.

THE BOTANIST.

Some Californian Wild Flowers.

Written for the PACIFIC RURAL PRESS by KATHERINE A. CHANDLER.

Now springtime sounds the awakening bell of the flowers and at the same time calls the children out to the fields to learn about their plant neighbors.

BABY BLUE EYES.—One of our earliest treasures is baby blue eyes—first, one or two lonely blossoms appearing and then a whole colony. You all know the dainty flower that reflects the color of the sky, and you have noticed the fine lines that run down the petals to the center. Do you know what these lines are for? They are called "honey-paths," and they lead down to a dish of honey in the corner of each petal. Look for yourself at these little hairy bowls.

The baby blue eyes has spread this feast of sweetness for bees or flies or any insect that may choose to visit her. And why is she so generous, you ask? Look at her five stamens and notice the brown anther at the top of each. See how, in the fresh blossoms, it tilts outward toward the petal. When the bee comes down the honey-path to satisfy his hunger, he bungles around and hits the stamen. Then the anther opens and lets some of its gray pollen fall upon him. When he has eaten all the honey in one flower, he goes to another baby blue eyes to devour its sweets. While he is wandering, head downward, from one honey gland to another, his sides and legs are sure to brush the two little stigmas at the top of the pistil, and these stigmas hold fast the pollen he has brought from the last blossom. This is just why baby blue eyes prepares her delicate meal for the insect—that she may receive pollen from a sister flower, and so make strong seeds that will produce healthy new plants. If no insect brings her pollen, her anthers, as she grows old, turn in and pour their pollen on her own stigmas. This makes seed, too, but it does not produce such fine plants as if there had been cross-fertilization.

Have you noticed how careful the baby blue eyes is of her pollen? She does not open her eyes in the morning until the sun has warmed the air, and she closes up early in the afternoon to keep out any dampness. If there be fog or rain, she closes her petals tight and no moisture can get in. The insects take advantage of this habit of hers and secure comfortable lodgings within her delicate walls. See if you can find them asleep in her center.

Some people call the baby blue eyes the California bluebell, and the Spanish Californians named it Mariana, in honor of the Virgin Mary. I know one family that used to call it Jennie Delicates, because the first spring they were in California, living off on a lonely ranch, the eldest sister, Jennie, found some of these beautiful blossoms and exclaimed: "Oh, the delicates!" Not knowing their right title, the children named them from the exclamation.

You all have found some of the baby blue eyes family that have not blue eyes, but are white, with honey-paths and dots of black on their petals. These have the same habits as the blue ones, but there is one sister that has individual ways. Do you know the one that has large violet blossoms and that climbs high in shady woodsides? When you pick it, you find the stems all prickly, and at the same time so weak that they break at your touch. If you look at the stem under the microscope, you will see that each particle is a tiny hook, ready to catch on to anything that will help it reach up to the sunshine, and ready to pierce any mouth that may wish to devour it. They say that the Spanish Californian senoritas used to decorate their party dresses with this blue eyes, because it clung so gracefully. Probably no girl used it a second time, for it wilts very quickly, and would be an ornament for only a few minutes.

THE GOLDEN POPPY.—At the same time that the blue eyes peeps out to smile at us, the poppy comes to gladden the landscape. Every child of California knows our beautiful golden poppy and has gathered it by handfuls. Perhaps, just because it is so plentiful, he has not appreciated its beauty, and does not know that in the East and in Europe the California poppy is a treasured garden plant. However, it grows paler under civilization, and only here on our own shores, where it wanders entirely free, has it the warm hue of blazing flames.

You all know the little pale green nightcap that the poppy bud wears, and sometimes you have watched the petals pushing up and throwing off this cover so that they might reach the sun.

Do you know why the poppy wears so gorgeous a dress? Have you ever picked one and found an insect roaming about in it? Why was it there? The poppy does not offer a dish of honey as the baby blue eyes does, but she wears a bright gown so that she will attract insects from afar. When they come she has a generous supply of pollen for their hunger, and while they eat she sifts her yellow meal over them. You know how much pollen the poppy produces, and probably you have powdered your nose with its gold.

Like baby blue eyes, poppy is careful to keep her interior dry. She only keeps open-house during the sunny mid-day. Have you noticed how some poppies, as they grow old, curl each petal up by itself, close over its own pollen?

Perhaps it is the sleepy habit of the poppy that makes the plant useful to druggists as a substitute for morphine. They use its extract as a cure for headache and sleeplessness. The Spanish Californians used to fry the poppy plant in olive oil and add some perfume to make a hair oil, which kept their tresses long and glossy. The Indians of Placer county used to boil the plant or roast it on hot stones and eat it as a green.

But the poppy does not care what use it is to man. It has enough to do to ripen its seeds and get them scattered. Have you noticed how the seed-case is arranged and what will make it open? Watch it. Does the poppy root die when the leaves fade away? See for yourself.

If you care to read about flowers, you will find that our poppy has been more sung about than any other of our California wild flowers. All visitors have been impressed with its beauty. Indeed, its botanical name—Escholtzia Californica—tells of a visitor from Germany. Dr. Eschsholtz came here nearly a century ago in a Russian ship—and the story of that ship's voyage is another interesting tale—and wrote in admiration of the beautiful poppy. As he was the first scientist to tell the world about it, the botanists named the flower Eschscholtzia for him and California for its birthplace.

About fifty years before Dr. Eschscholtz stopped at San Francisco, some Spanish sailors sailing by the southern coast of the State saw the blaze of the poppies on the hills and exclaimed: "There is the altar cloth of San Pasqual!" They landed and offered up devotions of praise for finding the "land of fire," and the name San Pasqual still lingers in San Diego county. The Spanish Californians called the poppy Copa de Oro, which means Cup of Gold. Is not that an appropriate name?

The California State Floral Society have the poppy as their emblem and they have several times asked the Legislature to adopt it as the State flower. It has not been adopted yet, but we hope it will be some day, for surely there is no other flower so well beloved by both children and grown-ups, and there is no other flower so suggestive of our golden-hearted California.

113 Duncan St., S. F.

SHEEP AND WOOL.

Range Sheep.

As many are thinking now of sheep, a sketch of the several styles which comprise the great flocks of the range States is of interest. These sheep are classified by Prof. W. W. Cooke in Bulletin 32, Colorado Experiment Station, as follows:

OLD MEXICO SHEEP.—These sheep are the direct descendants of the original Spanish Merinos brought over 200 years ago by the Spaniards of Old Mexico. They have been bred with scarcely any outcross and are distinctly marked. They have long legs, a thin body, not very deep; small, rather long neck and a long, thin head, carried high. The wool is fine and thin. To the eye they appear almost worthless as mutton sheep and of still less value for wool. Their good points are that they are hardy, excellent travelers, will keep in good condition on the poorest and driest of ranges, are fairly prolific, and can be herded in bunches of almost any size. They fatten easily, though never looking plump and fat, like the northern sheep. When they reach the Chicago market, if in good condition, they outsell all other sheep, for they shrink very little in dressing, the meat has an excellent flavor, and the hide is so thin, firm and soft as to command the highest price. A well-fattened bunch of Mexican lambs will weigh on the Chicago market from seventy-eight to eighty-one pounds. Yearlings, ewes and old wethers of this breed are in good condition if they weigh ninety pounds in Chicago.

NEW MEXICO SHEEP.—These original Mexican sheep have been largely graded with Merino rams in New Mexico and southern Colorado, and for years were run there as grade Merinos for wool. They have not the thick, wrinkly fleeces of the typical Merino and show decidedly their Mexican origin, being intermediate in length of leg, body, neck and head, between the true Merino and the Mexican. They are small-bodied, quick-maturing sheep, and, although never growing very large, they get very fat. It takes them longer to fatten than the better bred sheep. Never less than five—and usually six—months elapse from the time they are put on feed until they go to market.

The bunches of lambs brought from New Mexico run quite even in size and appearance. They are all kept under the same condition, and but few of the flocks have as yet been topped with mutton breeds so as to present any great variation from the general type. When brought to Colorado in the fall—about the first of November—the lambs weigh, in bunches, from forty-eight to fifty-three pounds. When shipped to Chicago, in May, they weigh from eighty to eighty-four pounds. Their frames are not then much larger than in the fall, but the body is much deeper, almost touching the ground, and they are almost as thick through, making them very plump. They easily get the highest price on the Chicago market, for the same reasons as the Mexican sheep.

MERINOS.—Until a few years ago nearly all the sheep of Colorado, Wyoming, Utah and Idaho were straight Merino sheep, bred for the most part from Merinos brought from the East. Some flocks originated from the Mexican or New Mexican sheep, but they were crossed so many times with thoroughbred Merino rams as to lose the characteristics of the southern sheep. So long as these flocks were used for wool they were carefully bred by purchasing high-priced rams from the East. As the price of wool fell, the profits decreased until some seven or eight years ago a point was reached where the sheep for mere wool ceased to be profitable. Many flocks were sold, and those sheep men who continued in the business turned their attention to wool and mutton. Many of them still continue to use Merino rams, but the number of these flocks is constantly decreasing, and, especially from western Wyoming westward, the use of rams of the mutton breeds has become almost universal. These Merino flocks from the north retain the thick fleece of the original Merino, since the climate is not hot enough to thin out the fleece, as it does in New Mexico and Texas. Most of the wrinkles disappear, but a few remain around the shoulders, and the face has the Merino color distinct, being thus easily told from the southern sheep, which have no wrinkles and very thin wool around the head. The lambs are short-legged and consequently not such good travelers as the southern sheep, nor do they need to be, for the Wyoming ranges will average much better than the New Mexican. The lambs appear larger than the New Mexican, but will not weigh quite so much. From forty-two to forty-seven pounds is an average weight on the first of December. They grow a little more rapidly when put on feed than southern sheep, and will stand a little heavier feeding. In May they will weigh in Chicago just about the same as the southern lambs, yet if equal bunches were put on the market together the southern would more rapidly find a purchaser. The ewes, yearling wethers and older wethers of the Merino are heavier than those of the southern sheep. Yearling wethers the first of December should weigh from eighty to ninety pounds; old wethers occasionally go over 100 pounds. They fatten more quickly than the lambs—much more quickly than the southern lambs. Four months' feeding is always sufficient, and many bunches will be ready for the market after three months. They should weigh in Chicago from 115 to 125 pounds.

THE new California law regarding charges in the office of the Secretary of State for filing articles of incorporation of mining and other corporations provides that the following shall be charged: For filing articles of incorporation, if the capital stock amounts to $25,000 or less, $15; if the capital stock amounts to over $25,000, and not over $75,000, $25; over $75,000, and not over $200,000, $50; over $200,000, and not over $500,000, $75; over $500,000, and not over $1,000,000, $100; over $1,000,000, $150; for filing articles of incorporation without capital stock, $5; recording articles of incorporation, 2 cents per folio; issuing certificate of incorporation, $3; filing certificate of increase of capital stock, $5 for every $10,000, or fraction thereof, of such increase; filing certificate of decrease of capital stock, $5.

A HEAP of earth, the length of the slope being 45 feet from top to bottom, the slope being at an angle of 45°, has a vertical height of 31.8195 feet.

THE DAIRY.

A Local Dairy Association.

About thirty farmers met last week in the Central block, Hanford, says the Sentinel, for the purpose of taking the first steps toward organizing a Farmers' and Dairymen's Union. A. M. Stone presided and C. V. Parker was secretary. After considerable discussion the following resolutions were unanimously adopted:

Resolved, That we proceed to organize a Farmers' and Dairymen's Union, the object of which shall be the discussion of practical, economical and social questions appertaining to the three great industries of our country, viz: orchard and fruit interests, vineyard and raisin interests, and the dairy industry. To which organization shall be referred from time to time matters pertaining directly to each interest.

Resolved, That the officers of said organization shall consist of a president, first and second vice-presidents, secretary and treasurer, and a board of directors of four, three of whom shall represent the three interests herein mentioned.

After the adoption of the foregoing, another resolution to appoint a committee of three to select the officers of the Union was passed, and the following were selected from the floor: A. W. Lane, J. J. Cortner, J. W. McCord.

The committee made its report immediately, and the following officers were chosen: President, J. L. Hall; first vice-president, W. A. Long; second vice-president, A. M. Stone; secretary, F. J. Peacock; treasurer, C. V. Parker; directors, J. C. Rice, J. W. McCord, Leo Crowell, J. Wyruck.

On motion John Hall, C. V. Parker and W. A. Long were appointed a committee to draft constitution and by-laws, and report at the next meeting to be held Saturday, March 23rd.

The following signed the roll of membership: A. M. Stone, C. V. Parker, J. J. Nelson, J. L. Bullock, J. W. McCord, J. D. Hall, C. A. Fox, W. A. Long, J. C. Rice, J. T. Hall, J. T. Dunlap, Jno. Raisch, G. W. Murray, W. H. Camp, J. W. Belknap, J. J. Cortner, O. L. Raisch, A. W. Lane, W. B. Porter, Jno. Chambers.

Shorthorn Milk Records.

To the Editor:—In your valuable paper of Feb. 23 Mr. Ashburner, breeder of Shorthorn cattle, calls down Mr. Burke's statements in regard to the Holsteins winning all the prizes at the State Fair in the butter contests. He gave the results for 1894 and 1895, showing the Durhams were ahead of the Holsteins and Jerseys, making the most butter in three days. I will go farther back, to 1893, in the three days' test at the State Fair, where Shorthorns won the first and second prizes, there being two Holsteins and two Jerseys in the contest.

	Pounds butter fat.
Rosabella 8th (Shorthorn)..	5.438
Fillpail (Shorthorn).....	5.161
Olga of Y. B. (Jersey).....	5.016
Juan (Shorthorn).....	4.740
Zuarte of Vrow (Holstein)..	4.296
Maud S. of Florin (Jersey)..	4.054
Baden Ruby (Shorthorn)...	4.020
Fairy (Holstein).....	1.854

Rosabella 8th won first prize of $60 in the seven days' butter test in 1897. There were eight entries, including Holsteins and Jerseys. She was at that time eleven years old and had produced nine living calves that had sold for about $800.

The Shorthorns have held first place and won their share of all the prizes in the butter contests in California. As I have not the statements of 1897 tests, I cannot give the details of that contest. P. H. Murphy.

Perkins, Sacramento Co.

For a Lump in a Teat.

To the Editor:—Our cow has had a lump in one of her teats for some time; it stopped the milk. Can anything be done for it? Outside remedies have failed.—Reader, Eden Vale.

Give one drachm daily of iodide potash dissolved in one ounce warm water. Apply tincture of iodine externally. E. J. Creely, D. V. S.
510 Golden Gate Avenue, S. F.

New Dairy Law.

Oregon's new pure-food law, says the Oregon Agriculturist, is now in operation and includes practically all of the special features for which the State Dairy Association has been asking. It protects the dairy interests of the State against the fraudulent competition of oleomargarine as fully as any State law can do. It is now unlawful to sell or have for sale in this State any oleomargarine which has been colored to resemble butter, and the Dairy Commissioner is authorized to seize and hold any oleomargarine so colored which he finds in the State which is held for sale. This law will put an end to dealing in the stuff in this State, unless customers can be found who really want oleomargarine. There is one way in which colored oleomargarine will probably continue to come into the State, and that is in small shipments to keepers of restaurants, hotels, boarding houses, etc., especially in lumbering and mining camps. It is practically impossible to learn of shipments of this kind, as the stuff is shipped as butter and served as butter, notwithstanding the law. The Grout bill, if it had become a law, would have prevented this.

THE SUGAR BEET.

The Census Report on the Beet Sugar Industry.

The Census Office has issued an exhaustive report on the manufacture of beet sugar in the United States, prepared by Special Agent Guilford L. Spencer, under the direction of S. N. D. North, chief statistician for manufactures. California makes a fine showing in the report, and the figures give a clear idea of the permanent profit and commercial success of beet sugar making.

Of the thirty-one factories in operation May 31, 1900, eight are in California, nine in Michigan, three in Nebraska, three in Utah, two in New York and one each in Colorado, Illinois, Minnesota, New Mexico, Oregon and Washington. All but two of these factories are controlled by corporations. The total capital interested is $20,958,519, of which $10,139,780 is in California, $4,013,743 in Michigan and $6,804,996 in all other States. The total value of the product for the year ending May 31, 1900, was $7,323,857, of which California furnished $3,499,996, Michigan $1,602,266 and all other States $2,221,595.

"The small value of the products, $7,323,857," says the report, "is due to an enormous shortage in the crop of sugar beets for the year ending May 31, 1900. In all branches of sugar manufacture the years of plentiful harvest must carry the industry over years of failure and yield returns that will make the average earnings justify the investments.

"Of the sixteen new factories, fifteen of which were operated for the first time in 1890, several were not completed when the harvest was ready. In some instances there were serious losses from deterioration of beets.

"In addition to the factories operated in the census year, six, including an auxiliary factory at which beet juice was extracted, but no sugar manufactured, were under construction for the crop of 1900. A report of these new factories not being received, the figures given only approximate the capital invested in the new factories as $3,800,000, making the total of $24,758,519 for the new industry in the year 1900.

"Of the factories in operation during the census year, ten reported the total value of their products for the preceding business year as aggregating $1,838,681. The same factories reported product valued at $2,426,522 for the census year. The acreage actually contracted for in 1899 was 135,350. Because of shortage of the crop in various parts of the country, particularly in California, beets were actually harvested from 105,175 acres, and the average yield from this land, eight tons of 2000 pounds per acre, was very unsatisfactory. The average yield of beets for Germany for crops of 1896-97, 1897-98 and 1898-99, respectively, was fourteen, fourteen and thirteen tons per acre.

"The acreage seeded for the crop of 1900, including that for six new factories having a total nominal daily capacity of 3200 tons of beets, was only 123,400, whereas approximately 200,000 acres would have been required fully to supply the demand of the factories in operation during that year.

"The total product of sugar during the year ending May 31, 1900, was: United States, 163,458,075 pounds—California, 86,741,713 pounds; Michigan, 33,708,283 pounds; all other, 43,008,079 pounds."

Dr. Spencer says: "In 1899, as shown by the census statistics in this report, the number of factories operated was thirty, with an output of 79,998 short tons of sugar. The total quantity of cane and beet sugar of domestic manufacture, as reported in Willett & Gray's circular in 1890, was 229,537 short tons, showing that the production of beet sugar was then approximately 25% of the total sugar produced in the country from sugar cane and beets. The American beet sugar factories now have a nominal daily capacity of 22,310 short tons of beets.

FAKE TESTS and TESTIMONIALS ABOUT CREAM SEPARATORS.

There are always new people to be gulled with an old fake. Hence a word of caution is pertinent regarding the reputed separator "test" and "testimonial" advertisements now being published in some of the papers and put out in circulars.

As regularly as the malarial and sarsaparilla season comes round the would-be competitors of the De Laval machines like to flatter themselves by seeming to stand up alongside the De Laval machines and publish reports of their imaginary nearness in efficiency,—*according to means and measurements of their own creation and without much regard for truth and honesty.*

Many of these so-called "tests" are simply manufactured out of the whole cloth, it being impossible to locate the places where made or the persons by whom made. Others of them are made by agents or employes or by intending buyers who are offered a big discount and an agency provided they will "try" a De Laval machine in apparent test, the conditions of which "test" are to be fixed by the concern in question and the "results" then certified to by the purchaser. Sometimes innocent parties are called in as "judges," to certify to skim-milk "tests," when they know no more of the manipulative use of a Babcock Tester than they do of a flying machine. Occasionally tests may be honest in a way but so conducted as to be altogether impractical and misleading in results shown.

All this applies equally to testimonials, though some of these are given in good faith—just as is the case with "dilution" separators and every other fake and nostrum ever perpetrated.

There isn't a man living sufficiently familiar with cream separators to pass competent judgment upon them who does not know that the patent protected "Alpha" disc system employed in the De Laval machines renders them unapproachable by anything else yet devised,—a fact to which thousands upon thousands of De Laval users may bear witness with their experience.

A "20th Century" De Laval Catalogue may be had for the asking.

THE DE LAVAL SEPARATOR CO.

Randolph & Canal Sts., CHICAGO.
103 & 105 Mission St., SAN FRANCISCO.
General Offices: 74 CORTLANDT ST., NEW YORK.
327 Commissioners St., MONTREAL.
248 McDermot Ave., WINNIPEG.

Agricultural Review.

ALAMEDA.

A HORSE SHOW.—Haywards Journal, March 16: The success of the Livermore Horse Show every year has caused a number of our horsemen to bring up the proposition of holding a horse show here next spring. Mr. M. Henry, while at the Livermore Horse Show last Saturday, suggested the idea to one of the committeemen, and he was very favorably impressed, stating that he would help the project along by bringing all his stock; others also spoke encouragingly of the proposition.

COLUSA.

COW DIES FROM SWALLOWING A HAT PIN.—Colusa Herald: Sylvester Underhill lost a valuable milch cow last Sunday from a peculiar cause and the animal was dissected in order to ascertain the cause of her sudden and unexpected death. Her heart was found to be pierced nearly through by a lady's hatpin. The previous afternoon Mr. Underhill's little girl was out in the barn lot playing with her dolls and dropped the hatpin on some hay. The cow, on being turned into the lot shortly after, swallowed the pin with the hay, but showed no effects of its pointed diet until the next morning. The point of the pin protruded through the paunch and must have remained in that position for some time, as the heart was slightly punctured in numerous places as if the pulsations of that organ threw it against the point of the pin at each rebound. Finally the hatpin worked its way through the paunch as far as the head on the pin would permit and the heart of the animal was transfixed and death resulted.

HUMBOLDT.

MORE TIMBER DEALS.—Eureka Standard: A prominent lumber company has purchased a fine tract of redwood timber lands in Sections 1, 2, 3, 6 and 12, Township 3 N., Range 1 E. Of this tract, 855.97 acres were sold by G. R. Georgeson for a price which the revenue stamps indicate to be about $26,500. The remaining 160 acres of the tract were sold by the Misses Blanche, Carrie and Bertha Johnson of Eureka for an indicated price of $4000. This would make the totals 1015.97 acres at $30,500. A real estate firm of Eureka is getting together a tract of redwood in Grizzly Gulch, near Bridgeville, which, it is said, will be sold to an Eastern timber land buyer; the completed deal will involve about 6000 acres. In the instruments on file the prices paid owners range from $9 to $40 an acre.

LOS ANGELES.

SOFT OR "PUNKY" ORANGES.—Azusa Pomotropic: About six weeks ago the fruit in some of our upland orchards began to show signs of turning soft or punky. The condition appeared first in the foothill orchards, because as a rule the fruit ripens a few weeks earlier there than farther out in the valley. It naturally created more or less apprehension in the minds of owners whose orchards were thus affected—the tendency being to rush the fruit to the packing house with all possible facility. Growers will recollect a similar condition in 1895, and in a general way we believe history will repeat itself this season. During the year just referred to the oranges began to soften and the rind became apparently loose and the same alarm prevailed. Some fruit was rushed to the packing house and reached market in a fair condition, but the bulk of it remained on the trees and in the course of a few weeks (much to the surprise of growers) began to harden up again and was soon in better shape than ever for shipment. We believe it is brought about by certain conditions of the weather. The rains, followed by so much warm, soft weather, are, we believe, responsible. Our attention has been called to one or two orchards that showed the conditions outlined above to a marked degree, about three weeks ago, and at present they are decidedly harder and in noticeably better shipping condition.

MONTEREY.

BIG BARLEY.—Salinas Index, March 14: James H. Harris exhibited yesterday a bunch of barley, it being a sample from J. D. Carr's field back of the lake, on the old Sausal ranch. The barley is over 3 feet high and headed out with immense heads. That field will produce a record-breaking crop. How is that in contrast with the blizzard-afflicted, snow-and-ice-clad East?

TRAPPING GOPHERS BY WHOLESALE.—Salinas Democrat: A young lady who lives in San Bananche canyon has devoted her spare time this season to trapping gophers on her father's ranch. Up to date she has caught 275 of the pests, and is still on a hot trail after more of them.

ALMOND AND WALNUT TREES ON HIGHWAYS.—Salinas Democrat: A force of workingmen in the employ of the Spreckels Sugar Co. has been engaged for several days planting walnut and almond trees along the Spreckels boulevard. The trees are being set out 30 feet apart and will be planted throughout the entire length of the boulevard and along all the streets of the thriving factory town. In addition new houses are in contemplation and substantial fences are being put in place around those already built. Within a few years, when the trees shall have attained sufficient growth, the boulevard and streets of Spreckels will present a handsome appearance.

ORANGE.

THE CELERY COMBINE.—Santa Ana Blade, March 15: The proposition to unite the marketing of celery with the business of the Southern California Fruit Exchange is said to be meeting with a very favorable reception from growers throughout the celery-growing district, and already nearly half the celery acreage is said to be represented in those favorable to the scheme. A meeting will be held to-night at the residence of W. T. Clarke at Westminster for the purpose of appointing committees to canvass the entire district to find out exactly how the feeling is in the matter, and to take the first steps to complete the organization as proposed.

PLACER.

PROFITS IN ORANGES.—J. Parker Whitney of Placer county has written an open letter telling of the profits in orange culture. He urges planting Navels and says that seedlings will pay little more than expenses. He says that from a thirty-acre tract planted to orange trees numbering 3010 trees he obtained $9148, while the total expense was $5152, leaving a net profit of $3995, or $133 an acre. This is 6½% on $2000 an acre. For the present season he obtained 6863 boxes, against 4297 one year ago. He is so confident that this fruit will continue to pay well that he is now engaged in planting 10,000 Navel orange trees.

SAN DIEGO.

HONEY CROP OUTLOOK.—San Diego Union: A San Diegan who recently returned from a visit to his bee ranch, which is in the Escondido section, reports that the prospects for a large honey crop are most encouraging for this time of the season. It will need only a few later rains to make the prospects realities. Already the bees are beginning to make honey, but it is mostly for their own consumption. The season for taking off honey will begin in May and will continue through the summer, or as long as the bee feed lasts. The plants from which the bees are now obtaining honey are the manzanita and the greasewood. The recent rains soaked deep into the ground and have given the trees, sage and other honey-bearing bushes of all kinds a good start. The hills are green with vegetation and many varieties of wild flowers are blooming. This same condition is to be found in all sections of the county, and not in only one part. The bushes that will bloom in the height of the honey-producing season could not have had the rain at a better time. For this season of the year the prospects have not been brighter for a number of years, and apiarists are consequently very hopeful and happy.

BEEKEEPERS' MEETING. — Escondido Advocate, March 16: M. D. Nichols, secretary, reports that at the meeting of the Escondido Beekeepers' Association, March 9th, the objects of the Association were further considered, also prices on beehive material, honey cases and other articles required to handle a honey crop, were received, and action was taken to procure those needed by the members so far as possible. Eight more names were added to the roll of members. The Association is working for a honey case that will tare as near eighteen pounds as possible, the cans to weigh two and one-half pounds apiece. The members present went on record in favor of patronizing home industry as far as practicable.

SAN LUIS OBISPO.

GEN. P. W. MURPHY SELLS SANTA MARGHARITA RANCH.—San Jose Herald: One of the largest real estate deals in this portion of the State has just been consummated in the transfer of the famous Santa Margharita ranch, in San Luis Obispo county, to Joseph and Christian Reis of San Francisco. The property involved in the big transaction belonged to General Patrick W. Murphy of this city. In the tract are included about 18,800 acres of rolling range and pasture land in the most fertile part of the southern county. The consideration of the sale, it is said in local banking circles, is $270,000. Of this amount $220,000 is represented in claims and mortgages on the ranch which had been held by the Reis brothers, so that the cash returns to General Murphy amount to $50,000. There have been rumors in plenty of the sale of the Santa Margharita property for months past, but this is the first official announcement that the transaction had been consummated.

SANTA BARBARA.

A PHENOMENAL BELLEFLEUR.—Santa Barbara Press: At the Hiram Stinson place, in Carpinteria, there have been some strange phenomena in the growth of Bellefleur apples during recent years. The trees usually blossom in the latter part of March. Two years ago they were in bloom the 1st of July. This year there are already apples as large as acorns on the trees.

SANTA CLARA.

FROST FIGHTING AT MORGAN HILL.—San Jose Mercury: F. G. Deane has installed a frost-fighting outfit on his place near Morgan Hill that bids fair to solve the hitherto difficult problem of saving the apricot crop. The outfit consists of 400 wire baskets that are supported by wire rods about 2 feet above the ground and surrounded by a pan containing water. Coal is the fuel used. This is ignited by means of pine sticks soaked in resin. The pans serve the double purpose of creating steam and also causing the heat from the fire to spread out, instead of going directly heavenward. A thermometer with an electric attachment will sound an alarm when the mercury sinks to 34°. The alarm bell is located in the house and connected by wire to the thermometer in the orchard. The experiment is creating widespread interest, and the orchardists are anxious to know how successful it will prove.

GOOD RECORD FOR PLYMOUTH ROCK HENS.—San Jose Mercury: Conrad Strickler of Edenvale is the owner of a fine pen of Plymouth Rock fowls, one of which has given a record of 240 eggs in one year. Double-yolked eggs are frequent, but recently one of the hens surprised its owner by laying an egg containing three yolks.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: San Francisco parties have been in this valley during the past week looking into the cherry prospects. They are offering to contract for this season's Royal Ann cherries at from $110 to $120 a ton. ——The frosts this week have been beneficial to the fruit industry. The trees were not far enough advanced to be injured, and it is thought by many orchardists that the arrival of frosts at this time will keep the young fruit back and insure a better crop. When the trees bloom out too early there is always danger of damage by late frosts.——The prospects at present are very encouraging for a heavy apricot crop in this valley. The Green Valley district is showing up better than last year. Corralitos sends a similar report, and C. O. Silliman's large 'cot orchard is rich with promise of a big crop. If the frosts are not severe during this month Pajaro valley will have a splendid crop next July.—— There has been a strong sale this season of Loganberry stock and growers of the Corralitos and Aromas districts have made big sales. The Loganberry, when grown in warm districts like those of Los Angeles and San Bernardino counties, is one of the best dessert berries, and as a pie fruit it is not excelled—and canners are recognizing that fact and their demand for it will make it a formidable competitor of the blackberry.

WILD PARSNIPS KILL A COW.—Santa Cruz Surf: Frank Gilbert lost a valuable cow a few days ago. The death was caused by eating wild parsnips.

SONOMA.

PRICES OF BERRIES ADVANCING.—Sebastopol Times, March 13: Two months ago the highest price talked of for blackberries for the coming season was $35 per ton. Since then several advances have been made and no one knows when or where the bidding will cease. To-day James Moran, the representative of the California Canners' Association, was here offering $41 per ton for berries, f. o. b. Sebastopol, and $42.50 per ton delivered in Santa Rosa. T. E. Barlow is following in the wake of Mr. Moran, ready to sign contracts for first-class shipping berries for $50 per ton in five-pound boxes, delivered at Santa Rosa. For berries that are not suitable for shipping purposes he says he will pay cannery prices, but cannot state what the latter figure will be.

WINE FOR CHINA.—Cloverdale Reveille: The Cloverdale Wine Company made an important shipment of wine to China this week. The company has been shipping wine to the Orient for many years, but the present is the largest single consignment ever made. It consisted of 100 barrels of port, angelica, claret and hock.

FOUR HUNDRED CHICKS BURNED.—Santa Rosa Democrat, March 13: Guy Beggs, a Two Rock valley chicken raiser, lost 425 young chickens by fire about 1 o'clock yesterday morning. The chickens were in a big 20-foot brooder. The brooder caught fire from the lamp and not a single chick was left alive. The chicks were two weeks old.

SHIPPING BRANDY TO GERMANY:—Santa Rosa Press-Democrat, March 6: Walden & Co. of Geyserville have closed a contract with S. Gneitz, agent of the German government, for the immediate shipment of 300 barrels of California brandy. The German government has been experimenting for years to find a brandy suitable for its army and navy. It might but will not use French brandy. Spanish and Italian brandies have not proved acceptable, and so some time ago German distillers tried to produce a brandy from dried California grapes. The distillate from these dried grapes was made with German potato spirit, but still the results were not satisfactory. Finally the government tried the brandy made here, and the upshot of these tests has been the placing of the order referred to.

STANISLAUS.

HEREFORDS FROM ARIZONA. — Modesto News: O. McHenry has completed the purchase of a herd of 1180 head of Hereford cattle which he secured in the vicinity of Phœnix, Ariz. They will be brought in on a special train to Oakdale, and from there driven to the mountains to pasture. The cattle were examined by Government officers and all were pronounced free from any contagious diseases.

TEHAMA.

OLD TREES TRANSPLANTED. — Red Bluff News: Paul Stoll has transplanted two orange trees that have been bearing the past ten years. They were taken up very carefully and moved from one place in his yard to another. It required the work of three men, who were a day and a half in making the change of places.

A LONG STRING OF FENCE.—Red Bluff News: E. T. Earl has a large force of men at work building a fence around the Hatch fruit ranch and grazing lands, situated on the Sacramento river south of Cottonwood creek. There will be 8¼ miles of fencing built and the fence will be 6 feet high.

ABOUT SUGAR BEETS. — Red Bluff News: Three crews of men are busily engaged sowing the sugar beet seed on the Finnell ranch. About 1200 acres will be planted.

WILD SHEPHERD DOG.—Red Bluff Sentinel: Alva Tracy, who has a homestead at Saddle Camp, near the foot of Tom Head mountain, 40 miles west of Red Bluff, recently returned from his place and informs us that a wild shepherd dog roams the hills and mountains and rapidly disappears at the approach of a man. Mr. Tracy caught the dog in a trap last fall and turned him loose. The animal was left there by some miners and he became thoroughly wild. It came up within 30 yards of Mr. Tracy about a week ago before it saw him and he recognized it as the one he had trapped. It lives on deer and rabbits and would be exceedingly destructive to a flock of sheep—much worse than a coyote.

TULARE.

WANT A GRASS FOR ALKAKINE SOIL.—Tulare Register: M. L. Weigle is experimenting with sand vetch—a sort of grass that is supposed to grow well on alkaline soils and where it is dry, and that, nevertheless, makes good feed. The grass question is of paramount interest to this valley, and we want a grass that will grow well on our waste alkaline lands, that will grow best when it is driest and make a good feed.

UNKIND TO THE BELGIAN HARE.—Visalia Times: Two ladies residing in the suburbs of this city are raising Belgian hares with the purpose of feeding them to their chickens, claiming it to be the cheapest meat to be had for that purpose.

DAMAGE FROM SANDHILL CRANES.—Tulare Register: The sandhill cranes are so numerous out on the wheat fields west of Tulare that they have to be herded off. There are thousands of them, and they hanker chiefly after the young and juicy grain that is just up.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O

THE HOME CIRCLE.

"Toiler, Canst Thou Dream?"

Toiler, canst thou dream
At the seam, at the plow?
Higher heritage than kings
Hast thou.

Canst thou read, in star or weed,
Answer to thy heart's deep cry?
Gold, nor gem, nor Love's own crown
So satisfy.

Toiler, canst thou wait,
Through the storm-black hour, elate,
Ruler of thy recreant will,
Dominant of Fate?

Toiler, canst thou trust?
From the dust, stand, and tell,
Though the tears come streaming, all—
All is well!

—Lulu W. Mitchell in Century.

About Paulina.

"Why, you don't think she cares for him, do you, Mrs. Battis? I told Lavina you'd know how it was whether anybody else did or not. You don't get round like other folks"—with a glance at the withered limb which dragged painfully behind her friend when she moved from her seat to take a fresh iron from the stove on the other side of the chimney partition—"but you see further into things than all the rest of us together. You know when a thing is so, and when it isn't, and just how much there is to it, besides. But I must say I never thought 'twas that way with Paulina. She's always been so contented—why, unless 't is now, I don't b'lieve it's hardly come into her mind that she could live with anybody else, or feel any different about it. And she's a good ways past twenty-five, too. I never could see that she'd given a second thought to anybody, in that way. It don't seem to ha' been in her mind at all."

"'T wasn't returned said Mrs. Battis, succinctly. "Paulina's a girl that's found a good deal to think about, different sorts of things, too. But they wasn't that kind, ever. Not but she's had her chances, or might have.

"I've been pretty sure o' that," interrupted Selina, eagerly. "There was Dr. Bishop—how dreadfully he did look when he went away! And there wa'n't a thing the matter, 'cept that he couldn't hev Paulina Stackpole, and he had wit enough to see it, and to abide by it, without asking of her. I always thought it come to her afterwards—you can't keep that sort of thing from a woman, whether she hears it by word of mouth or not. I guess it kind o' teched her, but it didn't make no difference. He saw how it was himself. She never could hev cared for him, save friendly like. And Henry West was all ready to chance it—he'd have spoken any time, if Paulina hadn't always been so cool and pleasant. Seemed as if you couldn't teach her that way, anyhow you could fix it. And she's real loving-hearted, by herself, too. But I never b'lieved she'd had any feelin's o' that kind, ever!"

"I know she hadn't," rejoined Mrs. Battis, with some emphasis, as she dropped into her high chair with a little sigh of relief. Standing was a weariness of the flesh to her, however she might try to conceal the fact. "No, I know she hadn't, so fur. That's the reason why she could love somebody else, now, if it happened so, and a good deal. She hasn't wasted herself as she went along—no, not even by thinking about such things afore the time come. And when it does come, if it should—or if it has—I ain't saying that I know certainly, and I don't b'lieve Paulina does herself, yet—when it does come, 'twill take about all there is of her."

"I tell you, Selina," went on Mrs. Battis, "with a girl like Paulina, and maybe with all of us, there ain't anything lost by loving, in whatever ways it comes to you. Seems to me as if all the loving she'd ever done, and the giving and the helping, if 't wa'n't anything great, had just made her able to love some separate one, when the time comes, so much the more. It's in her to do it. It's been strengthening and deepening all these years. And when she does become aware of it, it'll come so close and go so deep that I declare to you, Selina, I have felt to pray, considering it all, that someway the Lord might make it easy for Paulina. But I don't know—I don't know!"

"Maybe He will," rejoined Selina, with ready confidence. "'Specially if her folks don't interfere. I've heard say they do have pretty much their own way with Paulina, for all they do set such store by her. And Paulina's one that would give in to 'em most times."

"Most times," agreed Mrs. Battis, with reservation in her stone. Paulina's got a conscience, and she's been well brought up. But about this, now—I don't know. I always b'lieved Paulina had a way of her own, when she rightly come to it. And she's got to come to herself sometime—we all do. Same as—why, same as our forbears did afore the revolution. I always thought them fifty years here by themselves had somethin' to do with it—you've got to get fur enough off to see things straight and even, and other things with 'em, afore you can tell about anything. And I do a'most wish Paulina didn't keep quite so close at home. But she's a good girl, Paulina is, and she walks faithful, according to her own light, and does what's set for her. And I don't s'pose I need to be afred for her. But I can't help thinkin'!"

"Then do you think she cares for him?" asked Selina, reverting to her first uncertainty. "I should almost think he'd speak to her."

"He don't dare, yet," Mrs. Battis answered, with the tone of one who has mastered the situation. "He don't want to startle her. She'd oughter have time to come to it herself, and he knows it. She don't know how she does feel, yet. But I b'lieve they belong to each other as much as a man and a woman can when neither of 'em has put it into words yet. And I think its a-coming right along. And I do hope folks—her folks and other folks—will let the Lord and them two have their own way about it!"

Paulina, meanwhile, in her mother's kitchen, was quite unaware of this discussion, and of what was causing it. Blissfully unaware, for the palpable fact, with all the comment it was provoking, had not yet dawned upon her. She was only conscious, this morning, that something infinitely sweet and precious had come into her life. The sunshine had never seemed so tender, the skies so blue, the lovely distances all around her so full of gracious and beckoning suggestions. Something stirred at her heart, too vague to have a name, yet so real and so marvelous that it seemed itself the actual, and all about her its echo and reflection.

She had been glad of the bright, crisp day, cool for July, yet wondrous in its purity and freshness. She had had comfort in her father's greeting, the home content, the morning task. She had been glad, too, of the happy solitude when they all had driven away for a day's visiting, and had left her by herself in the house, with all the summer calms around her. She finished the Tuesday's ironing at last, and sat down behind the half-closed blinds to rest a little. It was yet early, and the day had not grown hot; and the country folk had not yet all gone by, journeying townward on their daily errands. Sometimes she liked to sit, half out of sight, and listen to them, but to-day she was wrapped too deeply in her own dreams. She did smile, however, over one frank speech.

"They'll never let her marry anybody. 'Specially if they didn't pick him out for her. They might do that, if it happened to strike 'em just right. But as for her choosing somebody—why, they'd never hear to it. They're that set and cranky about her—why, I don't b'lieve it's ever occurred to 'em, nor to her either, that she had a will of her own, or even could have. Queer!"

Paulina had to smile over this, dreamily, as I said, but as the shrill voices grew indistinct in the distance she settled back into her reverie again. It did not occur to her to wonder who this willess "she" could be, with never chance to choose lover or husband. But presently came another rattling wagon down the dusty road, and, slackening over the jutting ledges, the sound of strident voices again smote her ear.

"He owned it to George Kendall, fair and square. Said she was everything to him, and that he would hev her if he could. Oh, he put it in a nice way, of course, and he was drove to it, but he wa'n't afraid to say it, nor to tell what he meant. There, anybody could see that he set his life by her; why, you'd think there never was another woman made afore Paulina Stackpole, the way he looks at her! He haint no call to tell he loves her, though he did say it, straight as H. We all knew it about as soon as he did. And most folks think she don't see it yet. I don't know."

The harsh voices, that had told so wondrous a secret, died away in the distance. The locusts droned in the garden, and the bees hummed in the orchard, while Paulina sat quite still, her hands lying in her lap where they had fallen, and her cheek resting where it had lain ten minutes before, close against the cushion of her chair. It could not be so! What right had they to say such things—and of him? It could not be! Yet Paulina's heart stood still with the fear that it might not be. Was it true? From Paulina's soul came the answer—an intuition that revealed to her in one sweet, awesome moment, the certainty of his love, the consciousness of her own. The happy color crept to cheek and brow, and she dropped her face into her hands upon the window sill. When she lifted it again it was quite pale, but a solemn joy shone in her eyes.

"I did not think—I did not think—of that!" said maiden Paulina. "I did not know what it was to love—anyone—so. And I could not say that—that you loved me, dear. But now, I love you, dear, my dear, my dear!" Her head dropped again upon her folded arms. She raised it presently, her eyes still shining.

"I had not thought that God had made me so that anyone should love me—so! That you should care for me! And yet it seems to me as though He had made me, dear, just for you—for you! For I am yours, dear, now, always, if you but want me, dear. None shall hinder—none shall hinder, ever!"

It was well that she was quite alone all day, for in her first strange happiness it would have been impossible for her to conceal her feelings or to be interested after her custom in the little concerns of the household. She could only look, that day, at one transcendent fact, natual, inevitable, the very sunrise in her tranquil life, yet, like the sunrise, a marvel and a revelation. At twilight she ran in with some early raspberries for Mrs. Battis. She found her friend on her farther porch, tying up the rose leaves that she had been drying here in the cool, dry air for weeks.

"I always keep them," she explained. "I've a plenty to give away besides, from the other bushes. But these two he set out for me the next day after we'd come home here—the day after our wedding—a'most fifty years ago. He set great store by these white roses, and I did."

Paulina got away quickly. It was just the same, then, with others, with all true hearts. Fifty years—it was a long time, yet love made it very short, it would be the same if it had been a century, or centuries. What had time to do with love—such love as theirs?

At home, next day, she was the same Paulina, meek, gentle, responsive, yet with a subtle difference. Something shone through her gentleness, something, quite undefinable, gave to her sweet brightness a quality it had not before. She had come to herself in a day.

It was the next afternoon that Harris King came. Paulina herself answered his knock, with a readiness that had determination in it. But there was no trace of it in look or bearing, only a beautiful, rejoicing confidence, as she went to meet him.

"I wanted to come yesterday," he began, and his voice was not quite steady. It seemed impossible to speak of ordinary things, or of aught save those which concerned their two selves.

"But I had a message; my cousin wanted me to go over to Wray with him, on his way to Bentham. He has a friend there—he expects to marry her. That was his errand now. You see he is ordered to Cuba—his appointment came Monday. A very good thing for him, too. But he couldn't go without her, and he wasn't sure how she'd feel about it—he was dreadfully anxious. 'T was something he didn't look for, the position, and he'd like to take it, of course. But he didn't know what she'd say. I haven't heard yet. I guess she will go."

"Of course," said Paulina, simply. "Of course she will go. Because—because she loves him." She had quite forgotten her own secret for the instant, and she looked up at him with tranquil, steady eyes.

He caught his breath quickly. "Do you think so? It's something to ask of a woman, even when one loves her as—as I love you, Paulina—if he could! I believe he does, quite! I—I have wanted you ever since I first saw you, that day at school. It seems to me I would do anything that would make you happy, dear, even, almost, to giving you up. I love you, dear; I shall always love you. Could you care for me, Paulina, enough to go with me? Not very far, Paulina, only—only, you would be my dear wife."

And Paulina said, with her sweet eyes shining like steadfast stars, and trembling less than he, "I would go anywhere in the world with you, dear—or out of it. I love you!"

But when, blissfully tranquil, Paulina came to her parents that evening, lo! there was no need of determination or entreaty. To have loved is to know love in all other hearts, and to recognize its authority. And the kinship it gives overmasters all lesser desires, all clinging habitudes.

"She cares for him? You think so?" the father had whispered, huskily, when Harris King had left them.

The mother answered softly, "Yes."

"Then, we shall have to let her go!"

And by and by, in great content, Paulina went.—Olive E. Dana.

NOT HEREDITARY

In the main, consumption is not hereditary; it is infectious. People are too afraid of heredity; better not think of the subject at all. Infection occurs continually.

Low vital force is hereditary; which gives consumption its chance. And infection plants it.

Between the two, the crop is a big one: about one-sixth of the human race, so far as is known.

We suppose it needn't be 5 per cent, if people would take fair care and Scott's emulsion of cod-liver oil.

The care saves life in all ways; the emulsion is specially aimed at the lungs, beside its general food-effect.

We'll send you a little to try, if you like.
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CURE YOUR COLD WITH R. Hall's Pulmonary Balsam.

Girls as Coal-Heavers.

Bishop Potter paints this realistic picture in a paper in the March Century, recording his impressions of Japan:

If I were asked to say, of all that I saw in Japan, what that is that lives most vividly in my memory; I should, probably, shock my artistic reader by saying that it was the loading of a steamship at Nagasaki with coal. The huge vessel, the Empress of Japan, was one morning, soon after its arrival at Nagasaki, suddenly festooned—I can use no other word—from stem to stern on each side with a series of hanging platforms, the broadest nearest the base and diminishing as they rose, strung together by ropes, and ascending from the sampans, or huge boats in which the coal had been brought alongside the steamer, until the highest and narrowest platform was just below the particular porthole through which it was received into the ship. There were, in each case, all along the sides of the ship, some four or five of these platforms, one above another, on each of which stood a young girl. On board the sampans men were busy filling a long line of baskets holding, I should think, each about two buckets of coal, and these were passed up from the sampans in a continuous and unbroken line until they reached their destination, each young girl, on her particular platform, passing, or rather almost throwing these huge basketfuls of coal to the girl above her, and she again to her mate above her, and so on to the end. The rapidity, skill, and above all, the rhythmic precision with which, for hours, this really tremendous task was performed was an achievement which might well fill an American athlete with envy and dismay. As I moved to and fro on the deck above them, watching this unique scene, I took out my watch to time these girls, and again and again I counted sixty-nine baskets—they never fell below sixty—passed on board in this way in a single minute. Think of it for a moment! The task—I ought rather to call it an art, so neatly, simply and gracefully was it done—was this: the young girl stooped to her companion below her, seized from her uplifted hand a huge basket of coal, and then shooting her lithe arms upward, tossed it laughingly to the girl above her in the ever-ascending chain. And all the while there was heard as one passed along from one to another of these chains of living elevators, a clear, rhythmical sound, which I supposed at first to have been produced by some bystander striking the metal string of something like a mandolin, but which I discovered, after a little, was a series of notes produced by the lips of these young coal-heavers themselves—distinct, precise, melodious and stimulating. And at this task these girls continued uninterruptedly and blithely from ten o'clock in the morning until four o'clock in the afternoon, putting on board in that time, I was told, more than one thousand tons of coal. I am quite free to say that I do not believe that there is another body of work-folk in the world who could have performed the same task in the same time and with the same ease.

Cat Tactics.

A story was told of a cat, recently, which had been trained to rattle a certain door when she wished to go out. Her owner, it seems, had set apart for the cat's use a special chair in the sitting-room, and one day inadvertently occupied it while the cat was in the room. Meanwhile the cat roamed restlessly about, trying first one place then another, until finding that her mistress still sat stolidly in this special chair, she deliberately went to the outer door, rattled it, and when her mistress came to let her out, turned round and ran back to the sitting-room, perching herself on the chair with an air of triumphant satisfaction, much to the amazement of her mistress.—Boston Transcript.

DOMESTIC ECONOMY.

Various Methods in Which Prunes May Be Used.

NUMBER V.

JELLIED PRUNES.—Cook a pound of prunes until quite tender, but not broken. Take about an ounce of gelatine, soak it in a little cold water until soft, pour into this all the liquor from the prunes while hot. This will dissolve the gelatine. Put the prunes into a bowl or cakeform and pour over them the jellied mixture. This when cooled makes an attractive dish. If a little stick cinnamon is cooked with the prunes it gives a fine flavor.

PRUNE CUSTARD. — Bake ordinary custard in cups, being sure not to have them more than half full. When cold have some prunes that have been steamed and rubbed through a colander ready. Spread them plentifully over the custard. To be eaten with sweet cream or a meringe on top. This is a beautiful looking dessert, as well as delicious.

PRUNE SOUFFLE.—Take a quart of prunes—the Robe de Sargent or Silver prune, preferably—cook, sweetening to taste; remove pits and chop fine. Beat six eggs, yolks and whites separately, and pour over the chopped prunes. Bake fifteen minutes in a quick oven. Serve hot.

PRUNE PUDDING.—Boil one pound of prunes until tender and then strain through a colander and mix with the whites of four eggs, well beaten, add one cup of sugar and one teaspoonful of extract of vanilla. Beat well and bake in a buttered dish. Serve with whipped cream.

PRUNE ROLY-POLY.—One pound of prunes, one teacup of sugar, one-half pint of water. Soak prunes over night in water, stone them and then cook tender in water and sugar. Make a nice rich suet pie crust, roll out thin, spread prunes upon it, roll up and pinch the ends securely together, tie in a floured cloth and boil two hours. Serve with sauce.

(TO BE CONTINUED.)

Prune Pudding.

TO THE EDITOR: — Notwithstanding there being a recipe for every prune, I herein contribute one more. This is a pudding recently introduced in this neighborhood, so universally commended, so palatable and so wholesome, that there is no question of its general introduction solving the prune problem.

Ione. SUBSCRIBER.

PRUNE PUDDING.

One cup prunes soaked over night and sliced fine, one cup graham flour, one cup sweet milk, two-thirds cup molasses, two eggs well beaten, one heaping teaspoonful of soda, one-third teaspoonful each ground nutmegs, cloves and cinnamon, pinch of salt; boil briskly two hours.

The ordinary method is to put the ingredients in a 5-pound lard can and then place in a pot of boiling water.

Serve with wine or hard sauce, or with both.

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A Household Medicine

A Safe and Sure Cure for

Cramps Coughs Bruises
Diarrhœa Colds Burns
Sprains and Strains.

Gives instant relief.

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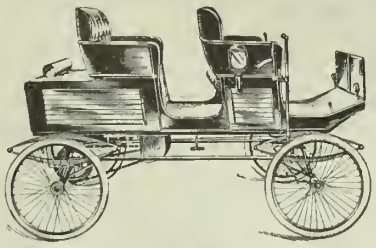

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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock, A. M., Wednesday, the 10th day of April, 1901.

I. C. STEELE, President.

CHARLES WOOD, Secretary.

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BECAUSE they are made on correct principles, therefore give the best results. The Menzel Hardware Co. of Santa Clara, Cal., state that "they have put up a large number of pumps of all kinds this season, but yours give us and our customers the best satisfaction."

BURTON PUMP AND MACHINE WORKS have removed to 44-46 Main St., San Francisco, Cal., and will give full particulars and furnish estimates of pumps run with gasoline or steam engines. Horse powers or windmills—complete plants. Closing out stock of second-hand gasoline engines, 1 to 20 H. P.

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The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 20, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	79½@79⅞	79⅝@80
Thursday	80¼@79¾	80⅛@79⅞
Friday	80 @80⅞	79⅝@80⅝
Saturday	80⅝@81⅛	80⅜@80⅞
Monday	81⅜@80½	81⅛@80¼
Tuesday	80⅞@80½	80⅝@80

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	5s 11¾d	5s 11⅜d
Thursday	6s 0½d	6s 0⅛d
Friday	6s 0¾d	6s 0⅝d
Saturday	6s 0⅞d	6s 0¾d
Monday	6s 0¾d	6s 0¾d
Tuesday	6s 0⅝d	6s 0½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 00⅛@ 99⅛	1 05¾@1 04¾
Friday	1 00 @1 02	1 05⅞@1 06⅛
Saturday	1 02⅛@1 03⅛	1 06¼@1 06⅝
Monday	1 02⅝@1 00¼	1 05⅞@1 04¾
Tuesday	1 00⅝@1 01	1 05 @1 04½
Wednesday	1 02 @1 02¾	1 05½@1 06

WHEAT.

The market for actual wheat or immediate deliveries has developed very little change since last review. There has been a higher range for speculative values, largely the result of local manipulation. Prices for options in the Eastern and foreign markets failed to show corresponding improvement with the values established here on Call Board. A large dealer in this market, one of the Big Four, is understood to be heavily long on May. Some of the shorts, fearing a squeeze from a possible corner, have been getting out of the way, and in their efforts to fill have naturally advanced prices on Call Board. May wheat moved up nearly 6c. from lowest point, but December at same time did not advance 3c. While there was a slightly firmer tone in the sample market, spot values did not show any appreciable improvement. Ships continue in too light supply for any active export business, neither is there evidence of Europe being especially short of breadstuffs or likely to be very soon. The market for ocean freights is a little easier, but not much relief for wheat is looked for on this score Vessels are finding it difficult to secure profitable inward cargo, as coal, which has been the main reliance of grain ships coming this way, is not now obtainable at figures warranting free importation. A ship which was North has been ordered here to load wheat on owners' account. The United States visible supply east of the Rockies decreased this week 769,000 bushels, being now 55,124,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 99⅛@1.02¾c.

December, 1901, delivery, $1.04½@1.06⅝.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.02 @ 1.02¾c; December, 1901, $1.05½ @1.06.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	96¼@	98¾
Oregon Valley	97½@1	00
Washington Blue Stem	97½@1	02½
Washington Club	96¼@1	00
Off qualities wheat	92½@	95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	-s-d@-s-d	6s3d@6s3½d
Freight rates	40@41¼s	37½@38¾s
Local market	$0 96¼@1 00	$0 96¼@0 98¾

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is a moderate amount of business on local account and a very fair export demand. Values remain quotably at same range as previously noted. Supplies are not of heavy volume, but of most descriptions there is a sufficiency for immediate requirements.

Superfine, lower grades	$2 25@2 40	
Superfine, good to choice	2 50@2 75	
Country grades, extras	3 00@3 25	
Choice and extra choice	3 25@3 50	
Fancy brands, jobbing	3 50@3 65	
Oregon, Bakers' extra	2 75@3 15	
Washington, Bakers' extra	2 75@3 25	

BARLEY.

Offerings of feed descriptions have been on the decrease, and the market for the more desirable grades has ruled firmer, quotable rates for good to choice stock showing an appreciation of 25@50c per ton. Quotable values for inferior barley remained about as last noted, but offerings of this sort were not heavy, and sales at full current rates were much more readily effected than previously. In brewing and export barley there is not much new doing, but holders of the same refuse as a rule to lot go at less than full current figures. A part cargo was cleared this week for Europe, aggregating 55,642 centals and representing purchases made some time ago.

Feed, No. 1 to choice	75 @	77½
Feed, fair to good	72½@	75
Brewing, No. 1 to choice	80 @	87½
Chevalier, No. 1 to choice	— @	—
Chevalier, No. 2	— @	—
Chevalier, poor	— @	—

OATS.

The same quiet state of affairs last noted is still prevailing in the oat market. Most of the oats arriving this week were from the East and came to parties having contracts with the Government. The market shows an easy tone, without being quotably lower. Under selling pressure, however, current values could not be maintained.

White Oats, fancy feed	1 42½@1	47½
White, good to choice	1 30 @1	37½
White, poor to fair	1 20 @1	27½
Gray, common to choice	1 20 @1	37½
Milling	1 42½@1	47½
Surprise, good to choice	1 42½@1	50
Black Russian	1 12½@1	30
Red	1 20 @1	45

CORN.

Market is lightly stocked, especially with domestic. Holders are contending for much the same figures as have been current for some weeks past. Not much corn is required, however, to satisfy the demand at prices now ruling.

Large White, good to choice	1 15 @1	17½
Large Yellow	1 15 @1	17½
Small Yellow	1 50 @	—
Eastern, in bulk (carload lots)	1 08 @1	10

RYE.

No improvement to record in the condition of the market for this cereal. The demand at present is insignificant, even at low figures.

Good to choice, new	77½@	80

BUCKWHEAT.

Very little doing. Stocks in the hands of dealers are small. Quotations are based on asking rates, or prices obtainable in a small jobbing way.

Good to choice	1 90 @2	00

BEANS.

There are not many beans arriving, no great quantities here, and no extensive outward movement at present. White varieties are in lightest stock, and are being very steadily held, but only very limited amounts are required to satisfy the inquiry at current figures. Limas are being offered sparingly, and holders in some instances are exacting slightly higher prices than have been lately ruling. Pinks and Bayos are in fair supply, and market for these is more favorable to buyers than for any other kinds now offering. Reds are in limited stock, but inquiry for them is only moderate.

Pea, fair to good, 100 lbs	—	@—
Small White, good to choice	4 75	@4 90
Lady Washington	4 10	@4 25
Butter	4 25	@4 50
Pinks	2 00	@2 15
Bayos, good to choice	2 65	@2 75
Reds	3 00	@3 25
Red Kidney	4 00	@4 25
Limas, good to choice	5 75	@5 85
Black-eye Beans	2 75	@3 00
Horse Beans	1 75	@2 00
Garbanzos, large	2 00	@2 25
Garbanzos, small	1 25	@1 75

DRIED PEAS.

Market is quiet for both Green and Niles peas. The latter are especially difficult to place to advantage. Domestic Green have to compete with Eastern, the latter being laid down here at about $2.62½.

Green Peas, California	2 65	@2 80
Niles Peas	1 60	@1 75

WOOL.

While there is a better tone reported in Eastern and foreign centers, the wool market locally shows no improvement. In fact, there is practically nothing doing in this center. Last year's wools are being held at much the same range of values as current for some weeks past. Some of those wools are being scoured on owners' account, and will be forwarded East for disposal. Some purchasing of new clip is being done in the southern and middle counties on the basis of about 7½c for good San Joaquin.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarse to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

Nothing of consequence doing in either a wholesale or jobbing way. The market will be necessarily quiet during the balance of the season, stocks being too light to admit of any special activity. Quotable values remain nominally as last noted.

Good to choice 1900 crop	13½@16	

HAY AND STRAW.

Market is moderately firm for strictly choice Wheat hay, offerings of this description not being particularly excessive, and much of the current inquiry being for the sort of hay in question. Stocks of medium and lower grades are more than ample, with market for same favorable to buyers and likely to so continue during balance of the season.

Wheat	8 00@13	00
Wheat and Oat	8 00@11	50
Oat	7 00@11	00
Barley	6 00@ 8	50
Volunteer	5 00@ 7	00
Alfalfa	8 00@ 9	50
Stock	5 00@ 7	00
Compressed	8 00@12	50
Straw, ₱ bale	40@	47½

MILLSTUFFS.

Bran has been held at tolerably steady figures, with stocks in comparatively few hands, but demand not very brisk. Middlings and Shorts remained quotably as last noted, neither being in large supply. Rolled Barley was marked up $1 per ton. Milled Corn was without change.

Bran, ₱ ton	14 50@15	00
Middlings	17 00@19	00
Shorts, Oregon	15 50@17	00
Barley, Rolled	16 50@17	00
Cornmeal	25 50@	—
Cracked Corn	26 50@	—

SEEDS.

The market throughout is quiet. Beyond a light jobbing trade in bird seed, there is practically nothing doing. Mustard seed is scarce. Quotations throughout remain as last noted.

	Per ctl.
Mustard, Trieste	—@—
Mustard, Yellow	—@—
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3½@ 4
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag market is showing more firmness, but at the same time is not so stiff as some reports endeavor to make it appear. In Wool Sacks there is a moderate movement at steady rates. In other bags and bagging there is nothing of consequence doing and no changes to record in values.

Calcutta Grain Bags, buyer June-July	6¾@	7
Calcutta Grain Bags, spot	6¾@	6¾
San Francisco Grain Bags, 22x36, spot	6⅝@	—
State Prison Bags in lots of 2000, ₱ 100.5	65 @	—
Wool Sacks, 4 lbs	32½@	35
Wool Sacks, 3½ lbs	30 @	32½
Fleece Twine	7½@	—
Gunnies	— @	12½
Bean Bags	4⅞@	5¼
Fruit Sacks, cotton	6½@	7¼

HIDES, PELTS AND TALLW.

The Hide market is barely steady, with no very active demand. Pelts are quotably lower, and are not very eagerly sought after at reduced figures. Tallow meets with fair custom at unchanged values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	8½	7
Light Steers, under 48 lbs	8	6½
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	6½
Wet Salted Kip	9	7
Wet Salted Veal	9	7
Wet Salted Calf	10	9
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 50
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	70	@ 90
Pelts, medium, ₱ skin	50	@ 65
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4	@ 4¼
Tallow, No. 2	3¼	@ 3¾
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

There are no great quantities offering of either Comb or Extracted, but there is very little positive inquiry at this date, and, with holders generally anxious to effect a clean-up, the market displays a weak tone. New crop honey is expected to be on market in considerable quantity in about ninety days.

Extracted, White Liquid	6 @	6½
Extracted, Light Amber	4½@	5
Extracted, Amber	4 @	4½
White Comb, 1 lb frames	12 @	13
Amber Comb	9 @	11
Dark Comb	6 @	8

BEESWAX.

Stocks in this center remain of very light volume. Quotable values show no change.

Good to choice, light, ₱ lb	26 @	28
Dark	24 @	25

LIVE STOCK AND MEATS.

Beef is commanding steady figures, under light offerings, but demand is not active. On Mutton values remain quotably as last noted, with market fairly supplied. Lamb and Veal of desirable size are selling to fair advantage, neither being in heavy receipt. Hogs are meeting as a rule with prompt sale and commanding steady figures.

Beef, first quality, dressed, net ₱ lb	7¾@	8
Beef, second quality	7½@	7¾
Beef, third quality	6½@	7½
Mutton—ewes, 8@8½c; wethers	8 @	9
Hogs, hard grain fed, medium	6⅛@	6¼
Hogs, small, fat	6⅛@	6¼
Hogs, large, hard	5¾@	5⅞
Hogs, feeders	5¼@	5½
Hogs, country dressed	7½@	8
Veal, small, ₱ lb	8 @	9½
Veal, large, ₱ lb	8 @	9
Lamb, spring, ₱ lb	10½@	11

POULTRY.

With only moderate quantities arriving of both Eastern and domestic poultry, the market has shown more firmness, quotable values for most descriptions being at a higher range during the greater part of the week than last quoted. The inquiry was most active and the market most firm for choice young stock, medium size to full grown.

Turkeys, live hens, ₱ lb	12½@	14
Turkeys, live gobblers, ₱ lb	10 @	11
Hens, California, ₱ dozen	5 50	@6 50
Roosters, old	4 50	@5 00
Roosters, young (full-grown)	7 50	@8 00
Fryers	6 00	@6 50
Broilers, large	5 00	@5 50
Broilers, small	3 00	@4 00
Ducks, old, ₱ dozen	5 50	@6 50
Ducks, young, ₱ dozen	8 50	@10 00
Geese, ₱ pair	1 50	@1 75
Goslings, ₱ pair	2 75	@3 00
Pigeons, old, ₱ dozen	1 75	@2 00
Pigeons, young	2 50	@2 75

BUTTER.

Current values are being well maintained for most desirable grades, the demand being sufficient to absorb stocks about as fast as received. Considerable butter is being forwarded outward, principally to the North and to the adjacent Territories.

Creamery, extras, ₱ lb	17	@18
Creamery, firsts	15	@—
Creamery, seconds	—	@—
Dairy, select	15	@—
Dairy, firsts	13	@14
Dairy, seconds	12	@—
Dairy, soft and weedy	—	@—
Mixed store	11	@—
Creamery in tubs	17	@18
Pickled Roll	17	@18
Firkin, California, choice to select	17	@18
Firkin, common to fair	15	@16

CHEESE.

Market is showing steadiness, there being a good demand at prevailing values, and stocks are not given chance to accumulate to any noteworthy extent. Eastern cheese is in light supply here and at primary points.

California, fancy flat, new	9	@—
California, good to choice	8½@	—
California, fair to good	8	@—
California Cheddar	—	@—
California, "Young Americas"	9	@ 9½

EGGS.

An active demand on cold storage account has caused market to rule firmer, values being 1@2c per doz. higher than a week ago. Any changes in prices in the near future are more apt to be to still firmer than to easier figures.

California, select, large, white and fresh	14½@15	
California, select, irregular color & size	13½@14	
California, good to choice store	13	@14
Eastern, as to section and grading	—	@—
Eastern, cold storage	—	@—

VEGETABLES.

A prominent feature of the week was the heavy increase in receipts of Aspara-

gus, aggregating 1500 to 2000 boxes per day for the past few days. Peas and Beans were in increased supply and lower. The tendency on the whole line of spring vegetables was to easier figures. The Onion market showed a rather easy tone, but values were without marked change. The steamer arriving this week from Australia brought 2185 packages or about 3300 centals Onions.

Asparagus, ℔ box	50	@	2 00
Beans, String, ℔ lb	6	@	8
Cabbage, choice garden, ℔ 100 lbs	80	@	1 00
Cauliflower, ℔ dozen	50	@	—
Egg Plant, ℔ lb	10	@	12½
Garlic, ℔ lb	2½	@	3½
Onions, Yellow Danver, ℔ cental	1 50	@	2 50
Peas, Sweet, garden, ℔ lb	2	@	3
Peppers, Green Chile, ℔ lb	8	@	10
Rhubarb, ℔ box	75	@	1 25
Squash Summer, ℔ box	1 00	@	1 25
Squash and Pumpkin, ℔ ton	—	@	—
Tomatoes, ℔ crate	75	@	1 50

POTATOES.

Market in the main was devoid of encouraging feature for the selling and holding interest, being liberally stocked with Burbank Seedlings, which were offered at generally low figures, especially other than most select qualities. The latter brought in a small way above quotations. Early Rose and Peerless were in light stock and in a limited way for seed brought tolerably firm figures. Sweets were offered in greater quantity than demand warranted, and market favored buyers.

Burbanks, River, ℔ cental	25	@	60
Burbanks, Petaluma-Tomales, ℔ ctl.	35	@	60
Burbanks, Salinas, ℔ cental	—	@	—
Burbanks, Oregon, lb cental	50	@	85
Early Rose	80	@	90
Garnet Chile, ℔ cental	75	@	90
Peerless, ℔ cental	85	@	1 00
Sweet Potatoes, Yellow, ℔ cental	50	@	75

The Fruit Market.

FRESH FRUITS.

The market for Apples shows much the same condition as noted in last review. Demand is slow and for other than strictly choice table fruit the tendency of prices is against the selling interest. A carload of Pippins arrived this week from Oregon. Large quantities of Apples are still held here in cold storage. Strawberries have put in an appearance, but not as yet in sufficient quantity to quote in a regular way. Fairly liberal receipts of berries are lookod for tho coming week.

Apples, fancy, 4-tier box	1 50	@	2 00
Apples, good to choice, ℔ 50-lb box	85	@	1 00
Apples, common to fair, ℔ 50-lb box	60	@	75

DRIED FRUITS.

There has been a quiet market the current week for all descriptions of cured and evaporated fruits, quotable values remaining as previously noted. Quotations in most instances are, however, more in accord with asking rates than than thoy are with the views of buyers, when the latter do occasionally name figures. Bids have been in most instances during the greater part of the season so irregular and at such a wide range that it has been impracticable to base quotations thereon. Weakness continues to be quite pronounced on Apples and Pears, with free offerings for this late date of both descriptions. The few Apples moving are selling at a wider range of prices than ordinarily has been experienced in past seasons, as buyers are now discriminating more closely. The Peach market appears fairly steady at the comparatively low figures lately established. Apricots now offering from first hands are largely low grade stock, and for this sort the market is extremely dull and weak. The Prune market remains much as last noted. Aside from a few odds and ends, here and there a ton or a half ton lot, there are no non-Association Prunes now obtainable. Only out of Association stocks can orders of any consequence be filled at this date. It is claimed that about 4,000,000 lbs. of non-Association Prunes were purchased by the Association, involving an expenditure of probably not less than $100,000.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½	@	6
Apricots, Royal, choice, in sacks, ℔ lb	6	@	6½
Apricots, Royal, fancy	7	@	8
Apricots, Moorpark	9	@	10
Apples, in 50-lb boxes, rings, pressed, fancy	4½	@	5
Apples, 50-lb boxes, rings, pressed, good to choice	2½	@	3½
Figs, White, fancy pressed	6	@	7
Nectarines, ℔ lb	4	@	6
Peaches, unpeeled, fancy	5½	@	6
Peaches, unpeeled, choice	4	@	4½
Peaches, peeled, in boxes	11	@	14
Pears, unpeeled Bartletts, halved, fancy	5	@	6
Pears, halved, unpeeled Bartletts	3	@	4
Pears, quartered, unpeeled Bartletts	3	@	4
Plums, Black, pitted	4	@	5
Plums, White and Red	5	@	6
Prunes, Silver	4½	@	6

COMMON SUN-DRIED.

Apricots	3½	@	4½
Apples, sliced	2	@	2½
Apples, quartered	2	@	3
Figs, Black	1½	@	2½
Figs, White	2½	@	3½
Peaches, unpeeled	3	@	5
Pears, prime halves	2	@	3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

The movement is slow, both outward and on local account, which is not uncommon for this season of the year. No changes are announced in Association prices, and there are none other than Association raisins offering.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@	—
Debesa Clusters, 5-crown	2 50	@	—
Fancy Clusters, 4-crown	2 00	@	—
London Layers, 3-crown, ℔ box	1 60	@	—
do do 2-crown, ℔ box	1 50	@	—
(Usual advance for fractions.)			
Loose Muscatel, 4-crown standard, ℔ lb	—	@	7
Loose Muscatel, 3-crown	—	@	6½
Loose Muscatel, 2-crown standard	—	@	6
Loose Muscatel, seedless	—	@	6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Although weather has been favorable for the consumption of Oranges, prices have not improved, and for other than most select the market has been weak, with prices irregular. Common qualities were in heavy supply. Lemons were offered freely at previously quoted range, and only for the very best did the market show any firmness. Limes were in slightly increased supply, but were not materially lower.

Oranges—Navel, ℔ box	75	@	2 00
Seedlings, ℔ box	65	@	1 25
Tangerines, ℔ half box	75	@	1 25
Grape Fruit, ℔ box	75	@	1 50
Lemons—California, select, ℔ box	2 00	@	2 25
California, good to choice	1 50	@	1 75
California, common to fair	75	@	1 25
Limes—Mexican, ℔ box	8 00	@	—
California, small box	—	@	—

NUTS.

No changes to record. Almonds remaining are offering at rather easy figures. Walnuts are now in very light supply. Peanuts are quiet and steady.

California Almonds, shelled	18	@	22
California Almonds, paper shell, ℔ lb	12	@	13
California Almonds, soft shell	9	@	11
California Almonds, hard shell	6	@	7
Walnuts, White, soft shell	8	@	11
Walnuts, White, California, standard	7	@	10
Peanuts, California, fair to prime	4½	@	5½
Peanuts, Eastern, hand-picked	5½	@	6
Pine Nuts	5	@	6

WINE.

The same firm tone previously noted is being experienced in tho wine market. There is little doing in offerings from first hands, most of last year's wine having been placed. The quotable range of values for dry wines of last year's vintage remains at 19@22c. per gallon, and there is some stock not obtainable at quotations. Shipments of wine from this port by sea in February were 311,050 gallons and 326 cases, with a total valuation of $98,715. This is exclusive of shipments to the Hawaiian Islands. In February, 1900, shipments aggregated 572,490 gallons and 805 cases, total value of same being $164,915.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	202,360	4,703,079	4,452,177
Wheat, centals	400,990	6,143,844	4,980,636
Barley, centals	76,660	3,148,587	4,445,011
Oats, centals	7,340	550,596	643,068
Corn, centals	440	86,779	99,179
Rye, centals	...	104,522	91,630
Beans, sacks	3,337	524,642	328,725
Potatoes, sacks	26,343	1,246,414	976,194
Onions, sacks	1,586	146,882	136,345
Hay, tons	2,417	124,495	122,134
Wool, bales	1,092	24,657	36,689
Hops, bales	55	7,238	9,268

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	127,716	2,705,094	3,054,652
Wheat, centals	195,445	5,851,825	4,413,411
Barley, centals	2,747	1,843,787	3,558,932
Oats, centals	260	47,821	34,413
Corn, centals	382	2,651	15,568
Beans, sacks	659	11,438	21,528
Hay, bales	315	82 894	102,919
Wool, pounds	...	409,631	4,129,659
Hops, pounds	750	532,388	952,633
Honey, cases	38	1,695	3,373
Potatoes, packages	1,291	110,084	60,421

California Dried Fruit at New York.

NEW YORK, March 20.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Market is quiet, with values fairly steady.

Prunes, 3¼@8c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 14@20c.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR WEEK ENDING MARCH 5, 1901.

669,276.—MINING MACHINE—A. Allen, Spokane, Wash.
669,227.—TIRE TIGHTENER—C. A. & G. A. Anderson, Portland, Or.
669,210.—ICE LOCOMOTIVE—C. E. S. Burch, Seattle, Wash.
669,196.—VALVE—Chaplin & Falk, S. F.
669,137.—HAND STAMP—F. W. Dobbel, S. F.
669,198.—ADVERTISING DEVICE—Fowler, Owen & Metcalf, Seattle, Wash.
669,279.—SHAPING SHEET METAL—C. H. Harrington, San Jose, Cal.
669,460.—HAIR CURLER—A. Haug, S. F.
669,167.—ADDING MACHINE—A. Hoch, Alameda, Cal.
669,168.—ADDING MACHINE—A. Hoch, Alameda, Cal.
669,421.—FIRE EXTINGUISHER—G. J. Luce, S. F.
669,266.—DUMB WAITER STOP—Pierce & McMahon, S. F.
669,431.—GATE—J. R. Scrafford, Corvallis, Or.
669,189.—GAS BURNER—A. C. Swain, S. F.
669,374.—GAME—C. W. Tarbet, Goldendale, Wash.
669,451.—CITHERNS—W. A. Thaldorf, New Whatcom, Wash.
31,156.—DESIGN—W. F. Schmidt, Blanco, Cal.

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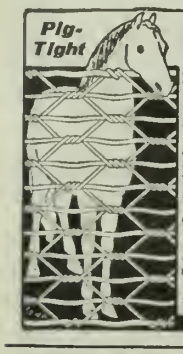

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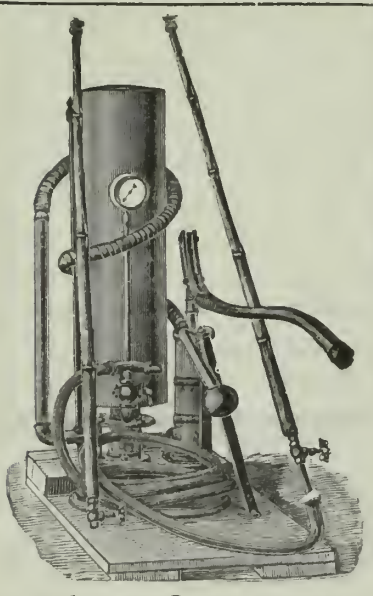

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AGRICULTURAL SCIENCE.

Potash.

In summing up an article on "Potash and Its Function in Agriculture," Dr. Wiley, the chief chemist of the U. S. Department of Agriculture, very compactly states the fundamental points of usefulness of this important element. He says:

The quantity of potash removed by various crops per annum varies greatly. The largest quantities are removed by beets and the smallest quantities by cereals and cotton. Beets may remove as much as 100 pounds per acre, cereals about thirty pounds and cotton about twenty-three pounds per acre for the average crops as produced in this country.

Tobacco contains a larger proportion of potash than any other crop, viz: about forty parts per 1000 of the dry leaves. Forage beets contain thirty-five, potatoes twenty, sugar beets eighteen, clover hay nineteen, beans thirteen and cereals five parts per 1000.

There is about four times as much potash in the straw of cereals as in the grain, while in peas and beans the proportion is about four to one.

The potash salts which supply the commercial potash fertilizers have been deposited as the result of the evaporation of saline lakes charged with potassic materials. The commercial potash of the world is derived almost exclusively from the neighborhood of Stassfurt, in Germany. The quantity of crude salts annually mined is about three-quarters of a million tons, worth nearly $3,000,000.

The high-grade commercial salts used for fertilizing purposes are manufactured from the crude salts, and are to be preferred when shipments are made to great distances and at high rates of freight. The principal crude potash salts used for fertilizing purposes are kainit, containing 12.5% potash, and carmallite, containing 9.9%. Tobacco waste, cotton seed hulls and wood ashes also furnish potash.

Recovered marsh or swamp lands and lands containing large quantities of sand need almost universally potash fertilizers. The percentage of potash in soils usually rises with their clay content. This depends on the kind of feldspar from which the clay is derived.

The maximum effect from fertilization with potash is secured only when other plant foods are supplied in such a way as to make a balanced ration and where proper methods of culture are employed. Lime is an important adjunct to potash fertilization, and as a rule should be added to a soil in large quantities where potash is applied.

The best kind of potash fertilizer is determined by local conditions, freights, and the nature of the soil and crop. Fertilizers containing considerable quantities of chlorine should never be applied to vineyards and tobacco fields.

Potash fertilizers, as a rule, should be applied in the autumn, or, or at least, from two to four weeks before planting, and should be thoroughly worked into the deeper part of the soil, in order to come into contact with the rootlets of the plant.

Crude potash salts can be applied with benefit to the preservation of stall manure. The germination of seeds, especially if they have a low vitality, is retarded by bringing them into direct contact with potash salts.

The application of crude potash salts to a soil which is not easily cemented may be useful during a dry season by reason of their power of attracting and holding moisture.

Crude potash salts, especially kainit, when added abundantly to a soil, are said to act, to a certain extent, as an insecticide or preventive of disease, and when mixed with stable manure act as a preservative by checking the activity of the dentrifying ferments.

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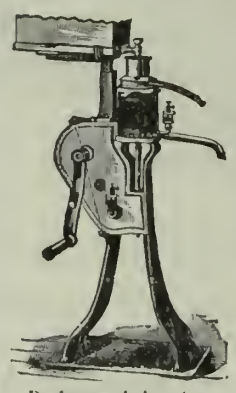

It costs no more at first and is worth much more. In fact, when its larger capacity is taken into consideration, its first cost is really less. No one but what will acknowledge that the U. S. with an *actual capacity of 400* or more lbs. per hour is worth in time and labor saved considerably more than another make costing the same which *only claims to have a capacity of 325 lbs. an hour.*

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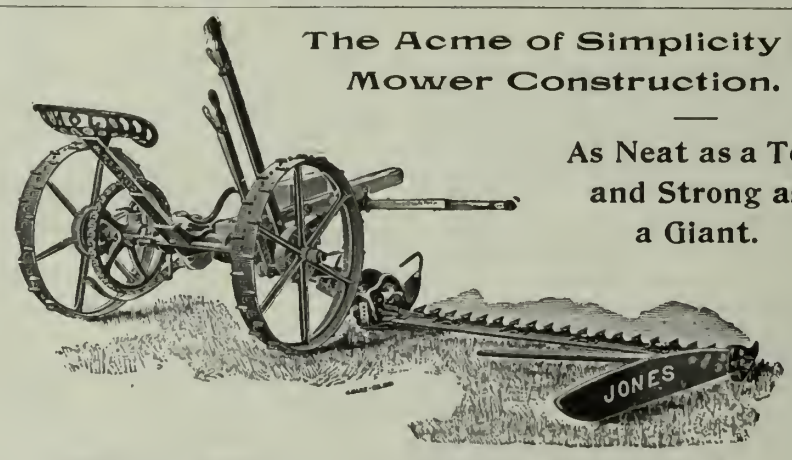

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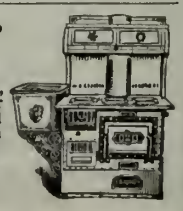

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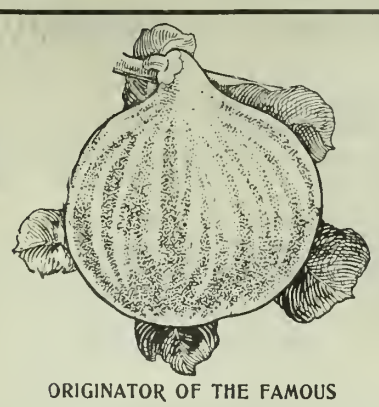

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Patrons of Husbandry.

Tulare Grange.

To the Editor:—After reading and approval of minutes of previous meeting, the first and second degrees were conferred on a class of two.

A communication was received from a committee of ladies appointed to provide premiums for floral displays at the Floral Carnival next month, requesting the Grange to offer a premium, the proceeds of the carnival to be used in buying seats for the pavilion. The Grange appropriated $5 for the purpose.

The Committee on Woman's Work asked for and was granted further time to report.

The Committee on Co-operation made a verbal report and was continued over for further consideration.

It was agreed that members will consider and discuss co-operation amongst themselves, and, after they have thoroughly investigated and fully understand it, an association for co-operation may be formed.

A communication was read from the secretary of Governor Gage, acknowledging receipt of Tulare Grange resolutions requesting the appointment of Prof. G. W. Worthen, Master of California State Grange, as Trustee of the Normal School at San Jose.

The secretary was directed to communicate with our representative in Congress and request his efforts to secure rural mail delivery for this vicinity. In advocacy of this measure, it was argued that the climatic conditions and roads here are much superior to those in the Eastern States where rural mail delivery is practiced.

It having been reported to the Grange that the Legislature of California has by joint resolution resubmitted a constitutional amendment to exempt bonds from taxation, this amendment is to be voted on at the next election, and that Hon. R. H. Myers of Tulare and Kings counties and Hon. Harry Levinson of Tulare county had voted against the same in the Assembly, the secretary was directed to tender these gentlemen the thanks of Tulare Grange for so doing.

In considering this proposed amendment, it was conceded that it is uncalled for class legislation. It was beaten at the last election by the most decisive majority given against any of the amendments to the Constitution submitted. It is advocated only by bondholders and dealers in bonds, who now propose to "educate the people to vote for it." How will it be done? Certainly not on its merits. J. T.

Moving a Grange.

At a meeting of El Verano Grange, says the Farmer, it was determined to change the meeting place of the Grange from El Verano to Sonoma. A suitable hall will be secured and the meetings will be held semi-monthly. The Grange enjoys a membership of thirty-five, which will probably be increased to fifty on account of the change. R. S. Dowdall is the present Master of the Grange.

Information About Fertilizers.

Balfour, Guthrie & Co. of San Francisco send us a list of pamphlets relating to the use of nitrate of soda and Thomas phosphate powder as fertilizers, which they will furnish free to persons desiring information upon the subjects indicated. They contain valuable information which farmers, orchardists and gardeners cannot well afford to neglect. Should any reader desire these pamphlets, send name and address to the well-known firm named above.

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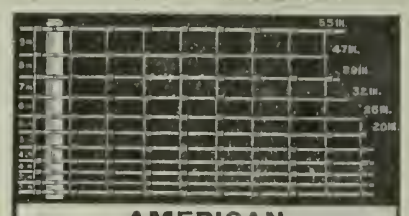

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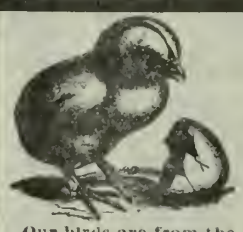

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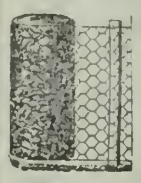

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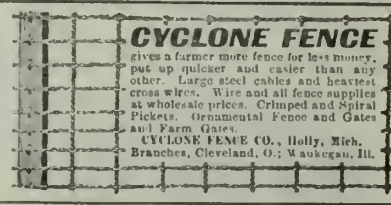

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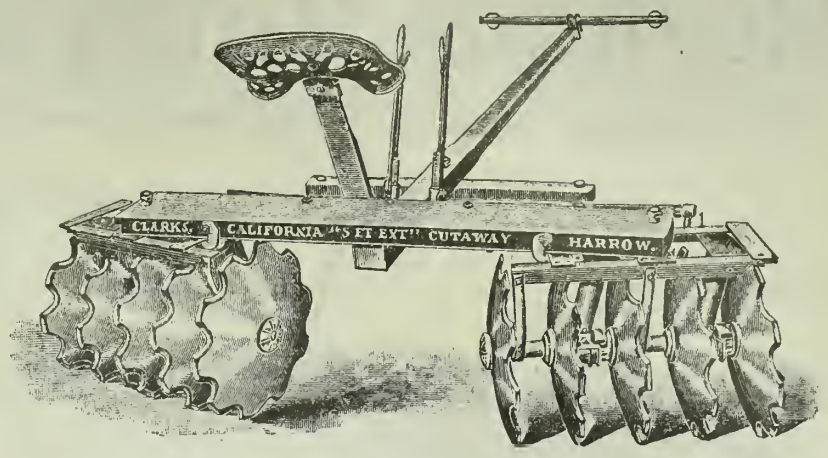

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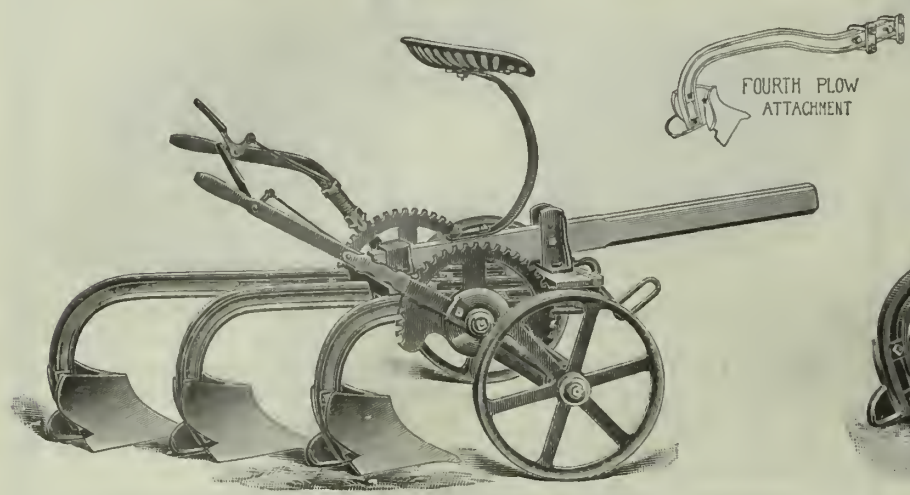
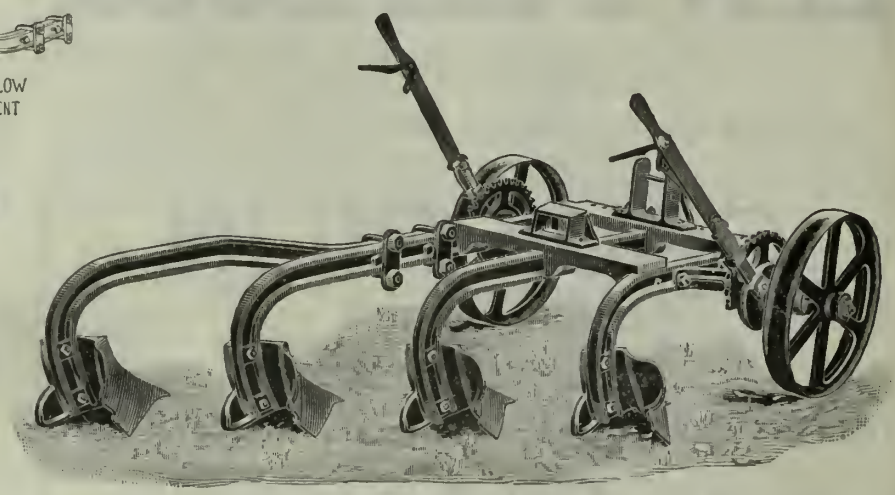


THREE GANG PLOW.



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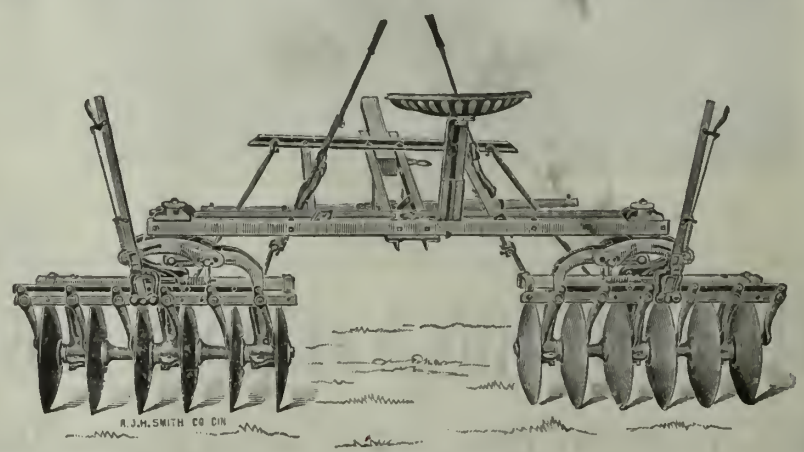

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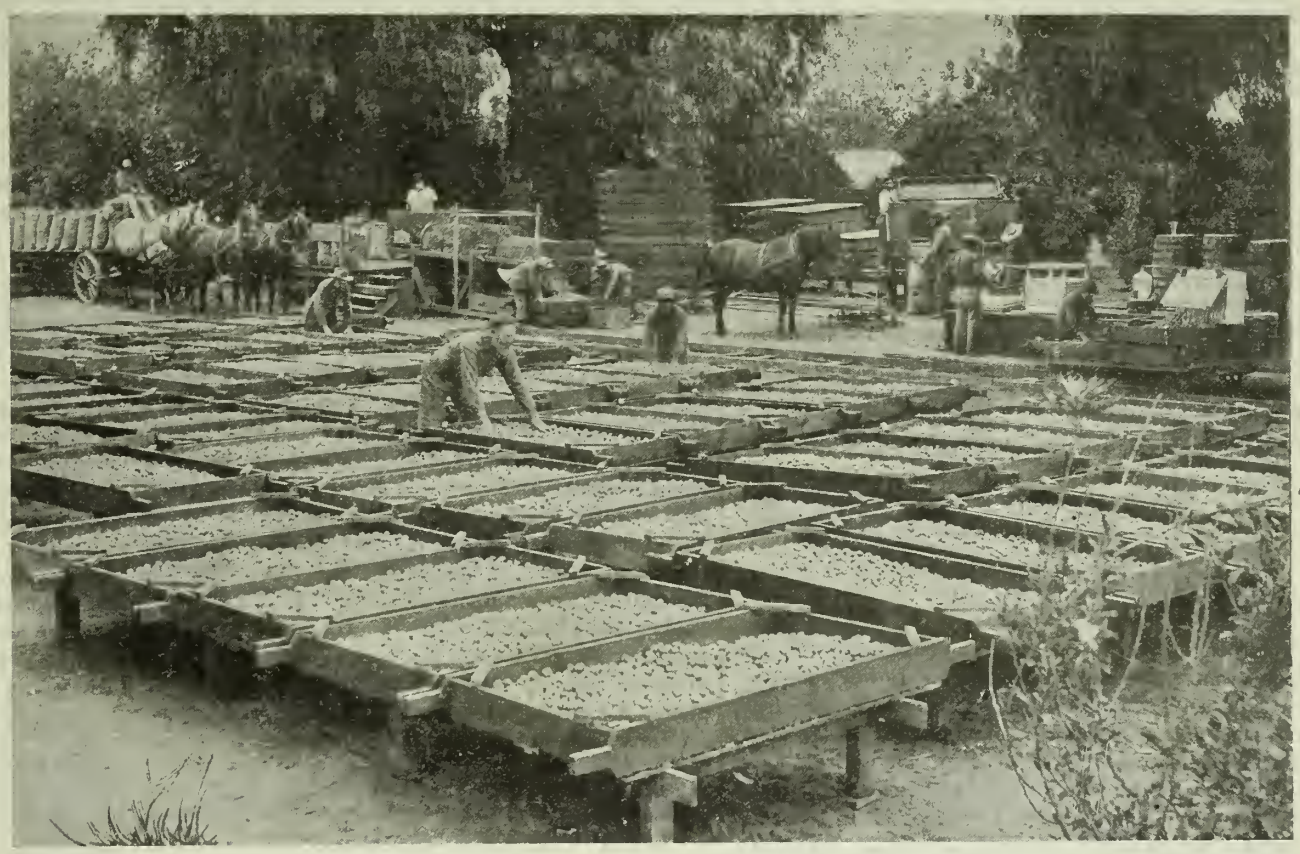
THE PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 13. SAN FRANCISCO, SATURDAY, MARCH 30, 1901. THIRTIETH YEAR. Office, 330 Market St.

Grapes and Walnuts.

Two very interesting harvesting scenes in southern California are given on this page. They are both thoroughly characteristic of our State, for in no other of the Union are the fruits shown grown so largely and with such natural advantages as here. Aside from these general facts, the pictures also indicate local methods which are unique and interesting. The first picture, which portrays a walnut establishment in the lower lands of Los Angeles county, is particularly notable because it shows how much is done to bring in the English walnut into just the condition which most delights the trade. Let us follow the process through. On the left comes the team bringing the sacks of nuts as they are gathered in the orchard. He has just stopped his team at the platform, where the sacks are taken from the wagon and emptied into the grader, which can be recognized by its cylinders and the horse power near by, which turns them, shaking out dust and leaves and delivering the nuts properly graded as to size. From the grader a tram track leads to the bleacher, in the upper right hand corner of the picture. This bleacher can be recognized by its square receptacles with slat sides. One of these is standing on the top of the vat and another is now being plunged into the vat by the two operatives.



Walnut Grading, Bleaching, Drying and Sacking in a Los Angeles Orchard.

This vat contains a harmless bleaching solution which removes stains and gives the nuts a uniformly bright color. Just beyond the bleacher are the casks and a demijohn, which contain the requisite water and chemicals for the bleaching bath. On the car just in front of the bleacher are the large trays in which the nuts are placed to dry, and on one of these trays is a bleaching crate which has just been emptied into it.

After the trays have remained in the sun sufficiently long for drying, they are carried by two men to the sacking bin, in the central background of the picture. Here a tray is now being emptied, while below the nuts are running out to fill the sack, which a man is holding to receive them. On the sack is seen the stenciled brand of the grower or the association to which he belongs. When this stage is reached, the nuts are ready for shipping. Here and there as the nuts go along, or are on the trays, hand picking is done to take out defective nuts so that the finished product is fine and free from blemish. To our mind it is not more remarkable that all this should be done to please the customers of our walnut industry than that it is possible to do it all in the open air, with very little danger of being interrupted by storms. The work goes on for several weeks in the early autumn in the bright sunshine with greater ease and facility than it could be done under a roof.

The Grape Harvest in the San Gabriel Valley, in Los Angeles County.

The second picture shows the harvest in a vineyard of wine grapes, the fruits being stacked in the foreground in the large boxes, which are loaded crosswise on a capacious wagon bed for hauling to the cars or to the winery. It is not uncommon to see almost trainloads of uncovered boxes of grapes—the free lunching of train hands and tramps being too small in amount to warrant closing the boxes. This free and open way of handling grapes gives one a deep impression that California is a land of plenty.

The scene is a characteristic one of the San Gabriel valley. The background is the slopes of the Sierra Madre range. The grape pickers show the general characteristics of the laborers available for fruit harvesting in southern California. They are wide-awake Americans of the newer sort, gathered from all the quarters of the country.

In the right foreground is a sitting figure, which, by his attitude and headgear, suggests the type of the old Spanish regime. The scene, as a whole, is interesting and characteristic of one of our most promising fruit lines as conditions now are.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, March 30, 1901.

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The Week.

Outdoor affairs are advancing reasonably well and free from extremity or disaster. Lower temperatures have prevailed for the last few days, but frost has been escaped up to the middle of the week. Many places would now like more rain, for March looks rather dry on the rainfall table this year. For April we have the chance of over 10 inches as in 1880, but may fall to practically nothing as in 1875. The average for April for thirty years at San Francisco is nearly 2 inches and we can get along fairly well with the average, though more would be desirable. We still see indications of rather a moderate fruit yield so far as our travels have extended this week, and such reports as we have are in the same line. Of course, however, this observation is too early and too narrow to count for much, except that there is surely no overwhelming amount of fruit in sight anywhere.

The markets are rather quiet. Wheat holds the same quotations, and futures are in the same state as last week, but not active. One cargo has gone out. Barley is also unchanged; 500 tons have started for New York via Panama steamer. Oats are kept quiet by the large receipts of Eastern on Government account. Beans are unchanged, with an easier feeling on Large Whites. Millstuffs are steady, with cracked corn slightly lower. Hay is dragging at old prices. Beef holds about the same, but mutton and lamb are easier. Hogs are higher again, as we are now running on the local product, with Eastern hogs worth too much at home to send here. Butter has been cut twice during the week, but cheese is firm and selling above quotations. Egg buying on speculation is still sharp, with higher prices in the country than here. Poultry is easier for all except large young stock. Potatoes are no better. Onions are unchanged, the trade consisting chiefly of Australians bought to arrive and being doled out from second hands. There is still a great crush of common oranges, which are being auctioned at low prices. Lemons are quiet and weak, although limes are scarce and high. Cold-storage apples are held high, but are not selling freely. Strawberries are coming in increased amounts from all producing regions. Dried fruits are slow. Some assorted cars are being made up and some raisins are going at the cut rate for export. The prune people have also made an export rate. Almonds are still slow at old figures. Good walnuts are scarce. Wool is dull. A shipment of scoured wool has been made on owners' account to New York. There is still some buying in the country, but not here. Few hops are left. Dealers are vigorously protesting against the coming advance in freight rates. They should certainly receive all possible consideration.

The coast counties may have grand coyote hunts to rival the rabbit drives of the interior valley. It is reported from Petaluma that the owners of half a dozen packs of coyote hounds are arranging a big coyote hunt to take place in the Sonoma hills next month. The coyotes have become so numerous over the county that sheep men have spent hundreds of dollars during the past year in buying imported hounds, and the feats of endurance and speed of the packs, as told by their respective owners, has awakened keen rivalry among the sheep men. The plan is to have a general starting time and point, with official timers and starters and riders to travel with the hounds. Several hound owners are making good money running down coyotes for the sheep men. One man cleared $130 in one week in the Skaggs Springs section the early part of this month.

We have had notes of a blackberry bustle in Sonoma county and high prices reached. A report from Santa Rosa says that the price at Sebastopol has advanced from $32.50 to $50 a ton, and may go higher. T. E. Barlow, a prominent grower of Sebastopol, is credited with starting the war. His profit on sales at $32.50 a ton was only $2.50, and he decided to obtain more from the canneries. The offer made to him by the California Fruit Canners' Association was refused. His purpose is to have the blackberry growers of his section adopt a plan similar to that adopted last year by the Watsonville growers. These men pooled all their strawberries and shipped them to commission houses in San Francisco that guaranteed them a minimum price of $2.50 per chest. This netted them over $25,000. Mr. Barlow has submitted a proposition to these same commission houses to handle Sonoma county blackberries on the same plan. A meeting will soon be held to work up the matter. It is getting decidedly warm and interesting.

Our apiaries are to be protected from the spread of foul brood by a new law which requires boards of supervisors, on petition of ten or more bee keepers, to appoint a suitable person to inspect apiaries in which "foul brood" or other disease infectious to bees is alleged to exist, and to require eradication of such cause of contagion or infection. All infected apiaries are declared a public nuisance, and where the owners cannot be found or served with notice the inspector is authorized to abate the nuisance by treatment or destruction, the expense to be a county charge. The inspector is allowed $3 a day when actually engaged in his duties. This compensation is too low to tempt job hunters, and probably bee keepers will take up the work in their own protection and to see that competent inspectors are provided.

Malicious destruction of property is to be a greater crime in the future in this State. Many things have heretofore escaped the definition of arson, but now it will be very difficult for any rural firebug to escape a term in the State's prison. Among other things the burning of which will henceforth constitute a felony are these: Any bridge exceeding in value $50, any stack of hay or grain or straw of any kind, or any pile of baled hay or straw, or any pile of potatoes, or beans, or vegetables, or produce, or fruit of any kind, whether sacked, boxed, crated or not, or any growing or standing grain, grass or tree, or any fence, cordwood or shakes, or any tule land or peat ground the value of $25 or over, not the property of the person. Burning any of these wilfully and maliciously subjects the culprit to the danger of from one to ten years in the State's prison.

It is now possible for any progressive neighborhood to work by itself for the improvement of its roads and to be sure that the money paid shall be expended just where it chooses. This will not only help progressive neighborhoods, but it will put to shame the unprogressive and have a tendency to whip them into line. The new law provides that any portion of a county may be formed into a permanent road division, on petition to the board of supervisors of a majority of the land owners residing in the proposed division. Road improvement within such division may be made by means of a special tax or the issue of bonds, and by the appropriation of an equitable proportion of the general road fund. No tax shall be levied save by approval of the majority of the land owners of the division at a special election, and approval of any proposed bond issue shall be had in like manner. All the road work shall be done by contract, let to the lowest responsible bidder, who shall give a bond, and the work shall be inspected by inspectors appointed for that purpose. This seems to rule out many abuses in present ways of doing road work, and we hope some district will proceed at once and give the whole State the advantage of a practical demonstration. What neighborhood will be the first to do this?

The "bob-tail nag" will no longer be a possibility in California—a bang-tail is all the abbreviation which the law will permit. By a law just passed, docking the tails of horses, or causing the operation to be done, is a misdemeanor, and county supervisors are allowed to appropriate a sum not to exceed $150 a month in aid of societies for prevention of all sorts of cruelty to animals.

Judge Bond, president of the Prune Association, has returned from the East and Europe and apparently finds that people are not starving for prunes anywhere. He finds, presumably, that it is necessary to meet the prices prevailing abroad, and, as stated in our market review, the Association has made a new export price. The Association announces that nearly all the stock of small prunes has been disposed of. Judge Bond says that he came home with some well-formulated ideas that may prove a remedy for the present deplorable situation, but he wishes first to consult with the directors of the Association regarding the utility and feasibility of his plans. Probably we shall soon have indication of what they are.

We have often spoken of the difficulty of getting Paris green which would contain enough arsenical poison to kill the pests and in the proper form to do that without injury to the tree. The trade is now, according to a law now in force in this State, to be regulated with the aim of getting a better article distributed. The law requires that manufacturers and dealers in original packages of Paris green, before offering the same for sale in California, to send a sample to the Agricultural Experiment Station at Berkeley, with a statement equivalent to a guaranty to purchasers that the Paris green sold shall equal the sample. No one is entitled to deal in Paris green in this State without a certificate from Berkeley showing that the law has been complied with. All Paris green must contain at least 50% of arsenious oxide, of which not more than 4% shall be uncombined. Violation of the Act is punishable by a fine of not less than $50, with costs, in a suit to be brought by the Secretary of the State Board of Horticulture. This ought to bring the whole Paris green manufacture and trade upon a better basis.

The California State Floral Society will do a notable thing this spring, taking advantage of the visit of President McKinley to give particular emphasis and occasion to its effort. It will have a grand general display of the floral productions of the coast in the grand nave of the Ferry Building, at the foot of Market street, in this city. This structure is better adapted to the purpose than any hall the Society ever was able to obtain; the space being 50 feet wide by 500 feet long, gives ample room for the proper display of plants and flowers, the ventilation and light being perfect. Exhibits of all sorts of fine things in the floral line are solicited, and a splendid lot of medals are hung up to give successful exhibitors something by which to remember their triumphs. It is also proposed to have a floral congress of the Pacific States, to be in session during the week of the flower show, the dates for which are May 16, 17 and 18. There will be three classes of exhibitors — professional growers, amateurs and dealers. The society has been fortunate in inducing the veteran florist, F. A. Miller, 215 Hayes St., S. F., to act as manager of its display and all particulars desired can be secured by correspondence with him.

A very remarkable instance of horticultural evolution is noted: the prune is getting to be a chestnut.

QUERIES AND REPLIES.

Alfalfa Leaf-Spot.

To THE EDITOR:—I send you some leaves of alfalfa showing some disease. Will you kindly inform me through the columns of your paper what it is, and the remedy for it? It is a year old and sown on good land.—SUBSCRIBER, Fowler, Fresno county.

This is an old enemy of the alfalfa plant. Nearly seventy-years ago it was first described by a French botanist and it has been pretty well known since that time. It is obliged to drag through life this ponderous name: Pseudopeziza medicaginis. Commonly it can be called alfalfa leaf-spot. It is different from another fungus known as clover rust, which also attacks alfalfa. This disease has been in California for some time and is usually found on alfalfa grown in dooryards, etc., where it is not subjected to regular cutting. In some cases on plants thus allowed to get old growth it is bad enough to remove most of the leaves. In the Eastern States it sometimes becomes very destructive, and Prof. Pommel of Ames, Iowa, estimated that one year it destroyed 50% of the alfalfa in that neighborhood. The disease appears upon the upper side of the leaves in small irregular brownish spots, which enlarge to about one-sixteenth of an inch in diameter and extend through the leaf to the under side, turning all parts brown, and the leaves finally drop. As for treatment, while this fungus like others of its kind would be checked by the Bordeaux mixture, no one would think of spraying alfalfa by the acre nor would it be easy to reach the affected surfaces by spraying. Cutting and burning would help to keep free the later growth of the crop, which will come when atmospheric conditions are less favorable for the growth of the fungus. Fortunately, though this trouble has been occasionally seen in California and in fact can usually be found here and there on the older leaves of the plant, it has not, so far as we are aware, become serious in this State. Not only is it possible that our dry summer air does not favor the growth of the fungus, but our method of frequent cutting and keeping the plant almost continually in fresh new growth would also be a potent influence against its injurious spread. We count largely upon the fact of its presence here and slight injury by it as a strong indication that we are not destined to suffer greatly from it.

Spring Budding.

To THE EDITOR:—I have sometimes heard people talk of spring budding—that is, budding young nursery stock at this time of the season instead of grafting peaches onto peach trees. It is not very easy to make peach grafts stick on peach trees—stick if done at this time of the year. The bark will peel now just as well as in the regular budding time.—PROPAGATOR, Oakland.

It is possible to bud early in the spring with a "pushing bud"—that is, a bud of the previous season's growth, just as it is beginning to start new growth, but there is so much trouble in handling growing buds without any leaf stems to use as a handle, and the percentage of success is so low, that nursery stock is seldom grown in this way. The earliest budding that is largely done is "June budding," though in California it can be done just as soon as you can get good buds of this spring's growth. This is done by pinching the ends of new shoots as soon as they have grown out several inches. This stops the lengthening of the shoot and causes the side buds to plump out, and as soon as they are full sized the budding begins. As soon as the buds are seen to have "taken" the top of the stock is partly cut away, or broken down a little distance above the bud. This starts the bud, and when it is grown strongly the top is cut away close to it. The bud then continues to grow, the scar heals over and you get a good small tree the same summer the bud is set, and such trees are sold as June buds the following winter. You will find these things and other matters of nursery practice more fully discussed in "California Fruits and How to Grow Them." Very little grafting is done on peach stock; budding is more successful.

Potato Diseases.

To THE EDITOR:—Please tell us something about potato diseases and their treatment.—S. H., Petaluma.

The chief potato disease in California is the blight which appears first in dark colorations on parts of the leaves and finally attacks the stems and tubers. The treatment for this is the Bordeaux mixture applied as soon as the spots begin to appear on the leaves and continued later, as was explained in these columns in our issue of Feb. 16, 1901. This disease works great harm for the reason that people do not treat it promptly and energetically. Another disease is the potato scab—so called from the unsightly blotches it makes on the surface of the potato. It can be largely prevented by selecting only smooth, perfect potatoes for planting and by soaking them before planting in a solution of corrosive sublimate. Dissolve two and one-half ounces of corrosive sublimate in two gallons of hot water and then add thirteen gallons of cold water. Wash the seed potatoes, put them in a clean sack and soak for one and one-half hours in the above solution. This is a rank poison and no potatoes should be left unplanted. Both the blight and scab are increased by repeated potato growing on the same ground. Rotation should be practiced.

Walnuts for High Elevations.

To THE EDITOR:—I am starting a new ranch in this valley. It is over 4000 feet elevation, and we have late and early frosts. Many acres of my land are a heavy, rich, black soil, inclined to adobe, and am anxious to put out some English walnut trees. Do you think they would thrive in this soil and climate? If the trees would grow well, but would not mature the nuts on account of frosts, then I should like to set them out for shade and ornament. Very few trees are grown in this valley. I want something different from what almost everyone sets out here—when they plant any, and they are the poplars, which I do not like.—H. R. T. COFFIN, Standish.

We have no data at hand about the success of the English walnut at your elevation so far north. If readers can supply it we shall be glad. If any English walnuts will do in such a place they will be the French varieties, and not the kinds commonly grown in southern California. It will not be a question of bearing alone, but of being killed back by frosts in the spring after the sap has been started by preceding heat. For this reason the country east of the Sierra Nevada is very trying on trees. It is worse than the unbroken cold of the North Atlantic States, for that keeps the tree dormant until it is safe for it to start growth. The alternations of heat and freezing can be endured only by very hardy trees. You will have to experiment with different kinds. It is possible that the trees which are now so widely chosen in the region are those which have shown hardiness.

Turkestan Alfalfa.

To THE EDITOR:—Can you inform me where I can procure Turkestan alfalfa seed? I am anxious to try sowing some this spring, as I have read such good accounts of it, but I do not find the seed advertised.—H. R. T. C., Lassen county.

We do not know where the variety can be had. The plants are being grown at the Experiment Station in comparison with ordinary alfalfa, but we are not aware that any seed has yet reached the trade. The inquiry has been very sharp and no doubt enterprising dealers will advertise it next year if they can get it.

Nails as Fruit Forcers.

To THE EDITOR:—I note an inquiry from San Diego county as to what to do with barren trees. The trees need iron. When fruit trees blossom and the small fruits fall, the best remedy is to drive a lot of cut nails into the body of the trees. Do not be afraid to drive quite a number of large nails in the trees. I have tried this a number of times and have never known it to fail. It will not harm the trees, but will do them good, and they will bear fruit next season and for years to come.—C. C. EISELE, Bishop.

This is a very old notion. We have no confidence in the theory that the tree gets iron from the nails, because it has been amply shown that materials embedded in wood are practically unchanged, and so the coming man will find out when he comes to saw up these trees for firewood. Trees which do not bear because of excessive vegetative energy may be turned to fruiting if enough nails are driven in to check the sap flow, just as a tree may be made to bear by cutting away part of the roots or knocking off part of the bark. But trees which fail to bear through weakness resulting from lack of moisture the previous season will not be helped by nails. They need stimulation, and not depletion, and nail driving is a depleting process, if it has any effect at all. If you want to give the tree iron, put the nails or any other old iron or salts of iron in the soil where water used by the tree will become tinctured with iron. But California trees seldom need additional iron, because our soils are naturally well supplied with this substance.

Rock-Softening Chemical.

To THE EDITOR:—Is there any chemical which will soften a rock while drilling a hole for blasting?—SUBSCRIBER, Sonoma.

We know no chemical which would not do more harm to the drill than good to the rock.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 25, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature has been slightly above normal during the week and conditions have been very favorable for all crops. Grain is in excellent condition, making vigorous growth, and will probably yield the heaviest crop for several years. Prospects are also good for a large crop of hay. Work in the hop fields is progressing rapidly. The light showers falling to-day will be of considerable benefit to grain and pasturage. Deciduous fruit trees are in full bloom and give promise of unusually heavy crops. Orange buds are swelling. Olives are looking well.

COAST AND BAY SECTIONS.

Conditions have been generally favorable for crops during the week, though northerly winds have dried out the surface soil in some places. Plowing and seeding are completed except in some of the low lands. Grain continues in good condition, but would be improved by occasional light showers. Prospects are good for a heavy crop. Alfalfa and pasturage are in good condition. Nearly all deciduous fruits are in full bloom and most varieties give promise of a heavy yield. In some localities, however, apricots will not yield as heavily as in some years, but it is probable the fruit will be of larger size than last season's. Light frosts have occurrrd in some sections, but no damage has resulted.

SAN JOAQUIN VALLEY.

The weather during the past week has been pleasant and generally favorable for all crops. The high north wind on Friday and Saturday in some portions of the valley did little or no damage to the grain. In some localities rain is needed to facilitate plowing in orchards and vineyards, and for summer-fallowing, while in others the ground is reported to be in excellent condition for this work. Peaches and apricots are out of bloom and have a good set of fruit. Apples, pears, plums and prunes are in full bloom. Prospects continue good for large crops of wheat, barley and alfalfa. Green feed is abundant and stock are doing well. Summer-fallowing is progressing and farmers are busy preparing for harvest. Rain would be beneficial in all sections. There has been no damage from frost.

SOUTHERN CALIFORNIA.

Warm weather has continued during the week. Most crops have made good growth, although beginning to show a lack of moisture in some sections. Rain has fallen in San Diego and vicinity, greatly improving the condition of grain and orchards. In nearly all other sections rain is needed soon, as the late sown grain is not doing well. The surface soil is becoming very dry from continued warm weather and drying winds. Green feed is becoming scarce in some places. Deciduous fruits are in good condition and citrus orchards are looking well.

EUREKA SUMMARY.—Valley lands are generally in good condition for cultivation. On the higher levels plowing and seeding are practically completed. Grain is growing finely. Early varieties of fruit are in bloom. Pasturage was never better.

LOS ANGELES SUMMARY.—The week was unfavorable for growing crops on account of drying winds, except in the extreme south, where rain on the 21st benefited vegetation. Grain is beginning to fail in places. Rain is needed badly.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 27, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	1 15	41 57	43 47	36 33	42	54
Red Bluff	T	22 17	19 07	21 46	40	78
Sa ramento	T	17 18	15 48	16.76	38	72
San Francisco	05	18 84	17 02	19 59	46	62
Fresno	T	10 28	7.09	7 73	38	76
Independence	.00	5.80	2 81	4 43	28	68
San Luis Obispo	.00	27 62	14 84	15 81	40	66
Los Angeles	T	14 10	5 56	15 24	46	78
San Diego	.52	9 08	3 13	8 54	50	74
Yuma	.00	3.60	.77	2.78	40	82

HORTICULTURE.

Mr. Gillet on the Tap Root Question.

Mr. Felix Gillet of Nevada City writes to the Oregon Agriculturist concerning the theoretical value of the tap root, which seems to be largely held in that State. There are also enough tap-rooters in California to make it interesting to review the question here, so we reproduce Mr. Gillet's discussion:

WHAT IS TO BE DONE WITH THE TAP ROOT?—This is a question often put to nurserymen by people planting that class of trees known to grow a root penetrating the earth right down, without dividing. Is the tap root necessary to the successful growth of the tree? Does its cutting back render the young tree less capable of resisting the force of the wind? What is gained, in fact, by cutting back the tap root? All these are questions of importance regarding tap-rooted trees, and which I propose to briefly discuss in this article, and more so in your paper, since I notice that so many people in your State lay such a stress on having the tap root of the walnut trees they order entirely preserved, their idea being that trees planted with the whole tap root on are more liable to succeed than otherwise, which is true if the trees have nothing else but a smooth tap root without any laterals and fibers, as are walnut, pecan and hickory trees grown in the deep, rich and moist soil of valleys. But when such nut trees are raised with plenty of lateral roots and fibers on, as is the case with mountain-grown trees, or trees raised in poor and shallow soil, it is of very little importance whether the trees are planted with the tap root on or not.

Look at grafted trees, grafted by the Treyve process in a propagating house, and which are planted in 4-inch pots after being grafted with a tall tumbler over the graft to keep the air around the graft humid and equal. The tap root is entirely done away with, and, after being planted in nursery rows, few of the trees ever grow tap roots again, and still no walnut trees grow so luxuriantly or bear so quickly and abundantly as grafted ones. In France, when the nuts are planted in deep and rich soil, in which the tap root grows immeasurably long and smooth, nurserymen in middle summer cut back the tap root of the trees with a very sharp blade, to make them throw out side roots; and when transplanting tap-rooted trees in nursery rows invariably cut back the tap root half way, to make the trees grow a fine top.

Among the tap-rooted trees are all the coniferæ (pines, cedars, spruces and the like), walnuts and, to some extent, chestnuts, almonds and pears. A general belief exists among people that the tap root must be preserved, especially in California, where the summers are so dry, to permit the tree to get the moisture indispensable to its growth. This is true whenever the trees are planted in dry and unirrigated land, nothing, in that case, being gained by cutting back the tap root, for the very reason that in nine cases out of ten the tap root will grow back, and even divide into two or three instead of one. This I have had many occasions to ascertain in taking up four-year-old walnut trees, whose tap roots had been cut back 4 to 6 inches from the collar when one year old, and before being planted in nursery rows. But in rich and moist soil the tap root may very well be done away with as perfectly unnecessary to the growth and development of the tree.

OLD TREES IN THE MOUNTAINS.—The tap root is of real use to a tree only in its young age, and is evidently intended by nature to enable those trees which are generally found on the sides of mountains, where the soil is hard and dry, both to withstand successfully the destructive force of the wind and to get from below the surface the requisite moisture for their successful growth. But when the tree has attained a certain age, and as soon as those large lateral roots have got a good footing in the ground, the use of the tap root is gone, and accordingly from time to time it ceases to penetrate any deeper into the earth and remains stationary, having fulfilled its mission.

The best illustration that can be had of the growth and use of the tap root in trees is seen in the hydraulic mines of California, where the huge stumps of our various coniferæ are hurled down and their immense roots laid bare upon the bedrock by the irresistible streams of water poured out by the monitors on the banks of clay and gravel from which gold is extracted. The tap root can be plainly seen, hardly measuring a few feet in length, while the real roots of the tree are as plainly seen, four to six in number, plunging from the side of the tree into the earth at an angle of 45° to 60°, thus enabling those giants of the Sierras to withstand, without fear of being blown down, those terrific storms sweeping in winter over mountains and canyons. Even with saplings, eighteen to twenty years of age, is the tap root of little use, those young trees having already developed lateral roots penetrating deep enough in the soil to permit them to do away with that root. The tap root may, therefore, be considered as being of great service to a tree only in its growth, and till the lateral roots have got a good footing in the earth. Whenever planting coniferæ, which are forest and shade trees, very little is gained by getting rid of the tap root, which ought to be let alone. But with fruit—and especially nut-bearing—trees it is a very different thing. Take the walnut, for instance, which is grown as much, even more, for its nuts than its timber. It is a well-known fact that a walnut whose tap root has been cut back in transplanting will go to bearing sooner and bear larger crops. And why? Because the cutting back of the tap root forces wide roots to spread out all around, and the growth of so many roots, many running close to the surface, will force the tree to throw out more branches and ramifications—in short, to spread out, instead of shooting up, like a pine or spruce, as would be the case if the tap root had been preserved. There is, then, a direct gain in doing away with the tap root when such trees are grown for their fruit. As nut-bearing trees are generally longer in getting to fruit than our common fruit trees, this point of making them bear sooner and larger crops when young is a very essential and important one. So it is with other tap-rooted trees. The pruning of the tap root by forcing the tree to throw out at once lateral roots stimulates their growth, and the quicker a tree spreads out and forms a head the sooner, also, does it go to bearing.

In conclusion, I would recommend the cutting back of the tap root in transplanting, unless such trees would be planted more as shade trees, or for their timber, than for their fruit.

Varieties of the Pomelo.

The agitation for the revision of the nomenclature of the pomelo has resulted in definite proposition prepared by a number of leading southern California pomelo growers at a meeting held last week in Los Angeles. The Cultivator gives the following as the names and descriptions of the varieties tested and the recommendations made by the committee:

Triumph—Dense, firm texture; peel smooth and of normal color; size small, 80s to 150s, running heavily to the latter; excessive bearer, tree small grower; juice slight in quantity; septa nearly free from bitterness; flesh of dark color, sweet and of fine flavor; early; oil cells very large and distinct; seed when cut often shows tinge of pink. Not recommended.

Nectar—Synonyms: Florida Seedling, Duarte Seedling, Douglass Seedling; dense, firm texture; peel very smooth and bright; size large, 42s to 80s, running large; tree strong, symmetrical, productive; abundant juice, vinous, excellent; pale lemon color; oil cells small and numerous. Highly recommended.

Seedless—Synonym: Marsh Seedless; beautiful; fine grain; bright peel; size normal, 42s to 96s; nearly seedless, rarely more than four to five, often none; very juicy, piquant, good; late; tree a fine grower and productive; fruit holds late on tree. Highly recommended.

Walters—Bright peel; fine grain; size 64s to 96s; good tree; medium bearer. Not recommended.

Mays—A firm, dense fruit of scarcely medium size; handsome; very acid and late. Not recommended.

Silver—Synonym: Thornless Silver Cluster. From J. R. Klemm of Winterhaven, Fla., who says of it: "No one in this section of Florida will plant any other variety." Small trees growing in California, now producing first specimens, promise finely, yielding fruit of very uniform and full size and of the densest and finest grain; abundant juice; vinous, sweet and racy flavor. Not fully tested, but a promising variety.

Thursby—Originated from trees budded in Florida by Mr. Lankaster and brought by him to San Diego. The fruit submitted by Mr. Copeland of the Land & Town Co. was from those trees; fruit large; usually flattened top and bottom, but occasionally pear-shaped; skin usually thin; juice abundant and richly flavored; seeds long, light yellow in color and lying near the core, which is usually small and is easily severed so that the fruit can be cut into two equal parts. Highly recommended for market.

Fogg's Improved Sweet (Accidental Seedling from Altamont Springs, Fla.)—Large, 42s to 80s; smooth, handsome; oil cells fine, very numerous; very thin skinned; grain dense, fine, juicy; flesh dark, sweet, rich, bitter principle distinct; tree strong, spreading, moderately thorny, abundant bearer. Highly recommended.

Imperial—Large; bright colored, handsome; fine, delicate, juicy; flesh light, clear, bitter principle; sprightly, pleasant flavor; tree a very strong and abundant grower. Recommended.

Aurantium—Medium, is very small; rather thick skin; flavor spicy, aromatic, fine; very juicy; poor tree; heavy bearer.

Leonardy—Small, fine flavor. Not generally known.

Irrigation During Bloom.

TO THE EDITOR:—In the PACIFIC RURAL PRESS of the 9th you say rain falls on blooming trees without disturbing fruiting. In reply I will state, in Georgia rain falling on a cotton bloom the first day prevents its fruiting. Peaches there when it rains at time of blooming do not set heavy. Here in California it happens to be for two successive years I witnessed the same prune trees being irrigated at Ontario when in full bloom—results not over one-fourth crop the following or third successive year. No irrigation during bloom, results a full crop. It does not do to irrigate orange trees at time of blooming if a large yield is needed; no harm to irrigate when buds are commencing to show. I would say to the almond man, to irrigate one-half of his orchard while in bloom and the other half as soon as the blossom has been dropped, and thus see which is best. I have an orchard of oranges and lemons and notice when lemons are blooming if it rains none of these blooms set fruit.

R. P. SIBLEY.

Los Angeles.

THE POULTRY YARD.

Recent Poultry Experiments.

The latest report of poultry experiments we receive is that from the North Carolina station, covering the work of the last fiscal year, from which we shall take interesting paragraphs.

WARM HOUSES AND WINTER LAYING.—Though the importance of warm houses is perhaps less in California than in North Carolina, the following is interesting: The total number of eggs produced per hundred hens in the warm house was 5239, while the other flock laid only 4136 eggs, during the five months of the test, leaving a balance in favor of the warm house flock of 1103 eggs, which were worth in the local market 24 cents per dozen, or $22.06. It is thus seen that the additional expense for increasing the warmth of the house was a very profitable investment. This experiment clearly indicates that for the production of winter eggs it is highly important to build warm, substantial houses for the hens.

MEAT MEAL AND GROUND BONE.—It is well known that ground fresh meat and bone is a very valuable constituent for egg production. In many localities, however, it is difficult to procure fresh bones and scraps from meat markets, and, even when a supply is constantly available, it is not usually an easy matter to grind the material for the fowls. On the other hand, beef scraps and meat meal can be bought of the poultry supply houses at any time, and, being in a thoroughly dry condition, can be readily mixed with other feeding stuffs. The experiment was undertaken for the purpose of comparing meat meal with ground fresh meat and bone as materials furnishing protein to laying hens. The first result was that the fowls which were fed fresh ground bone gained more in weight than those which had meat meal. As to the laying, the fowls receiving the fresh bone laid 3824 eggs, weighing 492.5 pounds, of an average weight of 12.75 pounds per hundred eggs, while the meat meal lot laid only 3260 eggs, weighing 391.2 pounds, and weighing 11.94 pounds per hundred. Consequently the fowls fed fresh bone not only gained more in weight but they also laid more and larger eggs. During the experiment four of the hens receiving meat meal died and were replaced by others. At the time it was thought that they were killed by some poison present in the meat meal. The fowls receiving fresh ground meat and bone remained healthy during the entire test. Of course, with another sample of meat meal the results might have been different, and consumers are advised when purchasing meat meal or beef scraps to insist upon obtaining a perfectly fresh article.

NITROGENOUS FOOD FOR GROWING CHICKENS.—Very little careful work has been done to determine how nitrogenous or narrow a ration should be for growing chickens, and indeed it is quite probable that no general rule applicable to all cases can be determined, for possibly the ration best suited for the production of broilers, which are forced as rapidly as possible until they reach a suitable market size, may not be best for the production of breeders in which vigor and strength are prime essentials. The influence of the food upon the health and development of the fowl was very marked. The nitrogenous chicks were vigorous and hearty at all times, while the carbonaceous ones were sickly, poorly feathered, and had very little appetite for their food. A certain amount of animal protein seems to be necessary for poultry, and perhaps the poor development of the carbonaceous lot was caused as much by this factor as by the composition of the ration. Of the two breeds the White Leghorns seemed to be much better able to thrive on the carbonaceous ration than the White Wyandottes, for they were much better feathered and more vigorous than the White Wyandottes in the same pen. The fact that the composition of the ration should depend to a certain extent upon the characteristics of the breed to which it is fed has been already observed. In an experiment conducted at the New York Geneva station, and described in the eighth annual report, it was found that "the larger breeds did somewhat better on the nitrogenous ration, and the smaller breeds considerably better with the less nitrogenous."

GREEN FOOD FOR LAYING HENS.—During the year the importance of a liberal supply of green food has been studied with two flocks of White Leghorn fowls about five years old. The experiment began July 14, 1899, and was continued for twelve periods of thirty

days each. Forty White Leghorn hens and four cocks were divided into two similar flocks and placed in two houses situated side by side. Both flocks were allowed runs 15 feet wide and 100 feet long, and both lots of fowls had access at all times to the grass and other herbage growing in their respective runs. For the first five periods pen 1 received an abundance of cabbage, rape and apples in addition to the grass of the run. During the next three periods the green food was given to pen 2 instead of pen 1; then for two periods pen 1 again received green food, and, finally, during the last two periods of the test, the green food was furnished to pen 2. During the 360 days each fowl when liberally supplied with green food consumed fifty-eight pounds of beef scraps, ground fresh bone and grain. During the same time fowls which did not receive green food consumed sixty-one pounds of the same materials. White Leghorn fowls which were at least five years old laid 114 eggs each when supplied with an abundance of green food and only 90 eggs when not supplied with green food.

In view of the fact that in practice the presence or absence of green food would exert its greatest influence in winter, when eggs are highest in price, it would seem very important to supply fowls during that season with some kind of green food, and in summer to allow them a run sufficiently large so that there will be an abundance of succulent vegetable matter for them at all times.

An Experiment Concerning the Infertility of Eggs.—In the spring of 1900 about 25% of the eggs produced by the fowls at the station farm were infertile; of the fertile eggs only about 65% would hatch, and the chickens which were produced were not strong and vigorous. The eggs were principally laid by pullets which had been used during the winter in various experiments concerning egg production. The fowls had been kept in flocks of twenty in laying houses, and had been fed quite heavily on a well-balanced ration. Whole grain was scattered in the litter in the houses at night, and, in addition to the exercise of scratching for their grain, each flock was allowed a run 15 feet wide and 100 feet long. The hens and cocks were apparently vigorous and plenty of eggs were obtained, but they would not hatch well. The experiment began March 11th, when a flock of White Leghorn flows was selected to study the influence of unrestricted range upon the hatching of the eggs. One-half of the flock was allowed to remain undisturbed in the house and yard to which it was accustomed, while the remainder of the flock was allowed to run at large. Both lots of fowls were fed the same grain ration, but it was observed that the fowls running at large did not consume as much food as those confined, which was probably due to the larger number of bugs and worms which they were able to find. The average of these tests showed that about three times as many of the eggs laid by the confined hens were infertile, and that the fertile eggs did not hatch so well as in the case of the fowls allowed unrestricted range.

THE FIELD.

Early Lima Bean History.

To the Editor:—Referring to the early history of the Lima bean industry in this and Santa Barbara counties, Mr. Jonathan Mayhew told me that a party (whose name I have forgotten) in Alameda county as early as 1864 raised them on quite a large scale there to supply San Francisco, shipping them entirely in a green state. Several of his neighbors tried to buy seed of him, but in order to hold his lucrative business longer he told them that he would give them a few to start with. When these grew they saw that they were the large butter bean. These duped neighbors then clubbed together and ordered a small shipment direct from South America, costing 25 cents a pound.

From this shipment Mr. Mayhew raised some in Alameda county in 1866 and brought twenty-five or thirty pounds to a sheep man named Snyder, who lived on his ranch at the mesa near the lighthouse at Santa Barbara, asking him to plant them on a plot of fenced ground, as they were a very valuable bean. Mr. Snyder cooked a mess and they all liked them so well that before planting time came around they had all been eaten up.

Mr. Mayhew moved onto his Santa Barbara ranch in 1866 and raised some Lima beans there in 1867 or 1868—I am not certain which. I was foreman for him on a ranch he had near Ventura, where we raised 100 acres of Limas in 1870, selling nearly all of them for seed purposes. The crop was light—only about 200 pounds per acre—it being a dry year. As many as three two-horse teams in a single day came from Carpenteria after these beans for seed purposes.

A few Limas had been raised in Carpenteria that year and perhaps the year before, but the general planting commenced in the spring of 1871.

I believe I invented the first bean planter ever used in California, but that style is now relegated to the rubbish pile. Aratus Everett.

Montalvo, Ventura county.

THE DAIRY.

Barns, Stalls and Floors for Cattle.

By Dr. W. N. Sherman of Fresno at the last Convention of the California Dairy Association.

The subject chosen is a very broad one and I can only attempt a brief discussion of its principal parts at this time. Good barns, floors and stalls are as necessary as good cows in the operation of a profitable dairy. To develop and preserve the profitable qualities of a herd, large or small, they must have proper care as well as food. The value of protecting our herd from storms and changes of temperature will not be denied. We must consider the delicate milk-producing machinery of the cow in providing for her comfort and protection, and to keep her in perfect condition we should provide for her the best our knowledge can devise or means construct. No other animal seems to so greatly enjoy the cool shade, the pure water, the warm sunshine, quiet rest and a comfortable house, and they yield good returns for all these privileges.

Comfort.—After the choice of a good cow or herd of cows comes the possession of a good place to keep them. This is all-important to their welfare and the owner's success. It facilitates the ease and ability to handle them, renders them docile, and permits regular milking, regardless of the conditions of the weather or of the change of seasons. Hence we should say the wise selection and construction of houses for cows is no less important than the breeding and feeding, if we hope to obtain the best results.

As a rule, greater consideration is shown the horse than the cow, and without reason or justice.

Fortunately for us, the climate of California is a mild one, and this alone may lead the thoughtless to neglect his duty toward his herd. The changes of temperature and moisture in this climate may—as in the human family—be as unpleasant to the animal here as the one accustomed to a more severe climate. At certain seasons of the year our changes in the temperature of night and day are very great. We are all more or less familiar with the effects of cold, frosty nights upon the milk yield, regardless of the feed, if cows remain exposed or out of doors at such times. It may not only lessen the quantity, but also shorten the duration of the milking period.

Cleanliness.—When we remember that the greatest enemy of pure, sweet butter is contaminated milk, and that this contamination comes from the barn or corral, we know where we must look for prevention. We believe that people who handle dairy cows need instruction upon this point more than any other, and if they become familiar with sanitary rules and bacteriological laws they will in turn instruct the milkers and other employes, and enforce rules to prevent filth contamination of milk. Without this knowledge people err through ignorance and not willfully, for they believe they are clean when the eye does not detect dirt in the milk. An experience in this line may be of interest. We have rules to regulate our milkers and the head milker must see that they are enforced. A few years ago some of our Portuguese milkers came to us filthy and dirty in their work. They could hardly speak English, but were taken to the creamery, shown the machinery and the scrupulous cleanliness of all utensils and the interior; the odor of the vessels, as well as the looks, was impressed upon them. We were soon rewarded for our pains by having them clean and careful in their work, always brushing their cows before milking, and keeping the floors and stalls clean. When they go away, as they do for a while each year, we are forced to apply the same methods of demonstration and instruction to the new employes. Our present butter maker, who is one of the cleanest and best we have ever had, came into the creamery from the barn. He is a Hollander and was born and reared among cows and takes a lively interest in his work. This plan of instructing the milker is the best we have found to secure the carrying out of sanitary rules and personal habits of care and cleanliness.

Without clean barns or stalls in which to milk we cannot hope to enforce such rules or get good results, hence we deem it of great importance to have barns constructed so as to be able to put into actual practice most of the valuable theories taught concerning dairying. We have found them easy of accomplishment and with very satisfactory results. The rules of the barn require that the milker clean his cows before milking. As the cows are milked they are turned out and the gutters cleaned and gypsum sprinkled upon the floors. This acts as a disinfectant and deodorizer and gives the floors a clean, white appearance, as though they were whitewashed. Cleanliness, while it costs something in dollars and cents, gives satisfactory returns in other ways. One man to clean and haul away the manure costs about $30 per month. It is his daily task to gather and spread the manure upon the ground, which yields large returns in increased yield from vine and tree.

Construction.—In building barns, we should say their relative merits should be comfort, cleanliness, convenience, ventilation and an economical construction, with a view of disposing of the manure with economy of time and labor. This feature is best solved by the cement floor and gutter, or some good substitute, which we shall mention later.

The approved methods of construction seem to favor the plan of a high, large storage barn, with sheds below and around the main building for the accommodation and feeding of the cows. While following out this general plan, one may arrange details in construction and dimensions to suit individual taste. I think a description of our own barn might elucidate the subject and shorten the discussion, at the same time giving a good understanding of cattle barns as generally built for dairy purposes.

If unable to build a large barn at first, we would advise the building of the shed portion first; this, done in a neat, substantial way, can be added to as the herd increases or quarters become crowded. This would be preferable to building a complete small barn first, and having later on to build another, for up to certain limits it is best to keep the herd together, as a matter of economy and convenience. The barn should have a central main building for the storage of hay, and feed alleys in front of the cow stalls for distributing the ration, the hay being fed from above into the racks of each stall. This central building rises 10 to 15 feet higher than the sheds and is ventilated at the top and ends. The feed alleys on two sides and at one end are 4 feet wide, covered overhead, so as to prevent direct draughts of air over the cow. Dimensions of this main building are 36x90 feet. At one end are built two silos, with a 3-foot alley between silos and barn wall. The stall sheds are 20 feet wide, and the stalls 3.6x8.6. At one end and corner are two box stalls 12x12, with cement floors, for the reception of cows about to calve.

An economical method for mechanically storing hay from the wagon into a large barn is as yet an unsolved problem. Our barn is so arranged that we can remove the Bidwell stalls about the middle of the building and drag the wagons of hay in from either side.

How It Works.—The shed portion of the barn contains the stalls, and the cows are admitted from sliding doors at both ends and in the middle. They soon learn their stalls and quietly retire to their places when admitted. Each stall is closed, so as to appear as an ordinary stall, and the cow steps across the gutter when entering. The exit is facilitated by opening the side of the stall and allowing the animal to turn. Careless milkers might back the cow out over the gutter and injure her. This must be strictly forbidden.

Ventilation is secured by sliding windows 12 feet apart, behind the cows, and so arranged in relation to the position of the cow that the animal is below the air draught. The bottom of the stalls are dirt, and the cow stands upon cement only with the hind feet, which should rest just on the edge of gutter.

In summer the cows are milked and turned out. As soon as the weather becomes too cold for the cows to remain out at night they are kept in the barn over night. At this time they are fed hay from the rack, and water is provided and stands before them all the time. The cows are never tied. We have used the various ties recommended and the objections and accidents resulting from them led us to abandon them. The only thing to keep the cow in the stall is the chain behind her. Occasionally a small cow will turn in her stall, but this is not frequent and may be prevented by the adjustable side.

The Stalls.—We use the Bidwell stall and believe it to be the best invented. They are built in the barn with foundation strips of 2x6, the strip next the gutter being covered with cement. These stalls are kept whitewashed, the same as all interior surfaces, and are as cleanly and free from other objections as we could wish for. They are 3½x8½ feet, provided with an adjustable feed box, so that the stalls may be shortened or lengthened, according to the size of the cow. We have also three sizes of stalls in series, to accommodate various cows. The tails are in line with the gutter. If the stall is too wide, an adjustable side piece is fastened on by two common door hooks. We have only used them in the end stalls. Very gentle cows occupy the first stalls, as, unlike the others, they have to back out over the gutter. After this first stall is empty the sides of others open as a gate and allow the cows to step over the gutter head first. Our longest cow, Lady Kathleen, is 8¼ feet, the shortest 7⅛ feet. This gives the maximum and minimum length. When the cows mature they are mostly large cows, occupying 7½ to 8 feet. The inventor of these stalls is Porter Bidwell of Illinois and there is a royalty of 25 cents per stall.

Floors are an important matter when it is reckoned as a strong factor in preserving cleanliness and an odorless condition in the barn. Our floors are of cement from wall to gutter, and for 16 inches on side of gutter where the cow's hind feet rest.

The foundation is laid in clay, then a layer of broken rock, brick, old cement, with a final thin coat of pure cement and sand. Cheaper cement may be used for mixing with foundation, but the best cement must be used for the final finish. When in Merced I was able to obtain slate cheaply. This could be furnished 2 inches thick and in pieces 2 to 4 feet long by 2 feet wide, and laid on clay, with cement in the crevices,

makes an ideal floor. The cost was not over 5 cents per square foot.

In our horse barn we have one side with box stalls and clay floor, the other with narrow stalls and corrugated cement floor with slight incline to the gutter at the outer edge.

The gutters in cow barns lead to cistern on the end, where liquid manure is stored, and pumped out into a box on wagon.

Piemelons as Dairy Feed.

Mr. O. B. Byram, of Westminster, Orange county, gives the California Cultivator an outline of local experience in growing and feeding the piemelon which is of much interest. He says he has fed them in the place of stock beets with satisfactory results, and continues: Some of our dairymen prefer them to beets as a dairy food. They have been found to be an excellent food for hogs, and all kinds of poultry are very fond of them.

Melons volunteer from year to year after ground is once seeded to them. They need no thinning or hand weeding and no cultivation after vines cover the ground. They produce about three times the tonnage per acre. A square rod of a volunteer melon crop of the present season weighed 950 pounds or at the rate of seventy-six tons per acre on good land with one irrigation. It is thought that a larger yield may be obtained when the seed is planted so as to cover the entire ground and melons grow as a separate crop. There were thirty-two melons on the square rod averaging over twenty-nine pounds each. Two melons weighed over fifty pounds each, five of the smallest averaged seven pounds each.

The piemelon thrives best on a rich sandy loam, but does well wherever watermelons are a success. It is regarded as a non-saccharine watermelon and originated by a cross between a watermelon and a citron. It is not a citron, as some suppose and erroneously call it. While the vine very closely resembles that of the watermelon, it is easily distinguished from the later by a strong though not unpleasant odor, and by a much more vigorous growth than either of its parents. The fruits are usually oblong in shape, very solid, with a tough rind, on account of which few cows can bite into them when ripe unless beginning to rot. Some dairymen chop them up when feeding to stock, others feed on the ground where grown, and still others haul the entire crop into the pasture lot, where the cows are allowed to help themselves. In this way bands of cows have been kept in full flow of milk, and both cows and young stock in excellent condition. A horse or mule turned in with them will open the melons, biting into one here and there.

To get the best results melons should not be fed up until thoroughly ripe. This is known by the light green melon turning to a light lemon or cream color, sometimes irregularly blotched with dark green spots. A spade thrust into one easily slips out again. Ripening is hastened by puncturing with a pitchfork. The true piemelon is believed to be far superior to the ordinary citron for feeding purposes. Citrons are invariably round in shape, from 6 to 8 inches in diameter, with red seeds, while piemelons have olive green seeds. Seeds taken from rotten melons always germinate best; the process of decay seems necessary to their proper development. Piemelons are excellent keepers, sometimes lasting until the next crop appears; are more easily harvested than beets, and have another advantage in that the whole crop may be removed at once without injury, leaving the land ready for another crop.

Piemelons are usually grown with another crop, such as corn, potatoes, beets, etc., though sometimes they are grown alone. Melons have sold at from 50 cents to $1 per ton in the field. Their principal point of excellence is the fact that they may be successfully grown on land too dry to produce any other crop.

TRACK AND FARM.

The Range Horse and His Education.

C. T. Oliver, formerly a Californian, but now of Klamath county, Oregon, writes to the Breeders' Gazette in support of the range horse, if not spoiled in the handling. The occasion for his writing seems to be an attack on the range horse by a certain E. T. S. in an earlier issue of the same journal. In controverting this writer's views Mr. Oliver gives some very important facts and some very interesting California reminiscences. He claims, first, that E. T. S. is either a very poor horseman or else he is prejudiced against the rangers, as no better class of work, driving or saddle horses exists in the United States than the animals of the outlying ranges. They are raised from colthood on the best grass the country affords, the bunch grass. They gain their living by rustling for it and they stay fat. Being compelled to travel in many instances for miles from feed to water their bone and muscles become firm. They become inured to hardships, have the best of wind and feet, and in fact, will compare very favorably with any class of horses in the universe of their own size. We use them exclusively in this section. Our wives and children ride and drive them. We find them of good disposition and to be serviceable and to possess great staying powers. They are capable of drawing immense loads and are willing to do it, and when properly handled are easily broken. It is a deplorable fact that three men out of every four that profess to be horsemen are no more fit to handle a wild horse than they are fit to become angels; in other words, they have not good horse sense. It is very hard for a man to teach a horse anything when the man does not know as much as the horse.

The Wrong Way to Handle Wild Horses.—I will now give you two methods of handling wild horses. The first is probably the one employed by E. T. S. (while acquiring his vast store of knowledge). The horses are driven from their range to the corrals. The victim is selected and separated off into a round corral. He is caught with a lasso by the front feet while running, then two or three men take hold of the rope and the horse is thrown violently to the ground. As soon as he is down one man jumps on his head and catches him by the ears thus holding him down until haltered. He is then allowed to get up and he undergoes a process called "jayhawking," or, in other words, he is whipped and scared in every conceivable manner to make him try to break loose, which he tries very hard to do, the breaker taking particular pains to throw the horse whenever the opportunity presents. This is also called halter-breaking. Then if the horse is to be broken to ride, a blindfold is placed on his eyes and the beast is saddled. The cinch (or girth) is drawn very tight, in many cases so tight that the horse cannot move without much pain. The blind is then raised and the horse is either scared or whipped until he does something, either run or buck or throw himself. The vaquero will probably throw him if he does run or buck. After undergoing this treatment for a while the blind is again drawn over the horse's eyes, the rider dons a pair of spurs with rowels as big as a trade dollar and mounts the animal. If he does not move he is punched with the spurs or whipped with a quirt or some one throws a tin can or saddle blanket under him. If he bucks he is mean. If he runs he is crazy, and if he does not move he is sullen and of no account. Funny, is it not? And yet under this kind of treatment most of the range horses become gentle and faithful creatures!

If it is desirable to break the horse to harness he is caught in the same manner as described, tied to a solid post or fence, a harness is fastened on him, then a wagon is drawn alongside of him with a gentle horse attached, the wild one is hitched alongside, then the drivers (there are usually two) untie him, get in the wagon and drive off on a run, each driver yelling like a Piute Indian. By driving fast they give the horse no opportunity to kick.

Many ranchers in these parts break their colts during hay time. In that case the hay wagon is the first to which he is hitched. If he starts to kick he is prodded with a fork and forced into a run. As soon as he is run down he is driven into the hay field after a load of hay. If he refuses to stand he is prodded some more and made to take another spurt around the field and is again driven to where the pitchers stand. In this way a load is finally obtained. The poor brute stands up to this treatment for a few days, when nature begins to flag, but according to the horse-tamer he is getting tame—and he is getting tame, so tame in fact that he has to be unharnessed and turned on his range, and with sore mouth, galled shoulders, skinned neck and head and swollen limbs the poor brute is left to his own meditations and give a chance to recuperate, which he invariably does. When he is again caught he is timid and according to the horse-tamer has forgotten all he had learned, but it is not so. Instead of having forgotten he remembers only too well what he learned. When again hitched to a wagon he expects to get another dose like the first one and acts accordingly. Strange, is it not? And yet these poor brutes haul big loads of hay from the field as long as they are able and not one in twenty ever thinks of balking. It is not their nature. The foregoing description may read like an exaggeration and to many of our Eastern friends seem impossible, but I have drawn it mild.

How Tapp Did it.—About eighteen years ago I was living in Sacramento. I heard of a noted horse breaker (Prof. Tapp by name) who was then operating in the vicinity. I went to see him, watched him handle some wild horses and I was so much impressed with his method that I went again and again as long as his job lasted. It was there I first realized how much common sense a wild horse possesses. Prof. Tapp caught all of his horses with a whip but he rarely struck one of them. He would take the wildest of horses, turn one of them into a pen and cautiously enter with him and by a certain method of his own would slowly approach him, though continually making a demonstration with his whip and in half an hour's time he would be standing alongside of the horse stroking him on the neck.

It space permits I should like to relate a circumstance that happened to Tapp. He was breaking horses and mules for Lux & Miller of California. One Friday he concluded he would take a rest until the following Monday. One of the farm hands who had been helping Tapp concluded he would experiment a little and see if he could not catch an animal as well as the professor. He secured the professor's whip, drove a wild mule into the pen and followed it in. The mule naturally tried to climb out, but failing in this it turned and faced the intruder. Then our friend, not knowing what else to do, struck the mule with the whip. The mule again tried to escape. Our raw recruit, thinking that all the mule needed was to be subdued, proceeded to whip him into subjection. The mule soon got enough and concluded to take a hand in the game itself; the result being that the mule put his foe out of the pen. Our friend, realizing something was wrong with his method, concluded to change his line of experiment. He went to one of the other boys that had been helping Tapp and asked him if he could catch a mule like Tapp did. "Oh, yes," came the reply, "all you have to do is to whip it on the heels and make it face you, then walk up to it." "Let us go and try one," suggests No. 1. "All right," says No. 2, who by this time had the whip. He entered the pen, flourished the whip a time or two and finally struck the mule. The mule charged and No. 2 barely escaped with his life. They pronounced the mule a bad one and put in considerable of their time on Saturday and Sunday tormenting the mule in order to have a good subject for Tapp.

On Monday morning when Tapp went to work both men went with him and took particular pains for a starter to drive in the mule that they had been training. Tapp entered the pen; the mule moved about uneasily. So did Tapp. The mule looked at Tapp and Tapp looked at the mule. They appeared to be sparring for an opening. One of the boys said: "Hit him, Tapp, show him who is boss." "Hold on," says Tapp, "you want to go kind of slow with that mule. He is highstrung. If I was to hit that mule he would fight. Now just watch me and I will show you how to catch that mule." In twenty minutes' time he had a halter on the mule and had not struck him once.

A Disciple of Tapp in Oregon.—When I first came to Oregon I had had some experience as a horse breaker, and at the first ranch I went to work I tried to introduce Tapp's method of handling wild horses, but the stockmen ridiculed the idea of taking so much time and pains to handle each horse. They even went so far as to dubb me "Prof. Tapp." During the following summer a Mr. Gupton, a scholar of Tapp's, came to this section and tried to secure a job of horse breaking by the same method. He was here a month before obtaining employment, but finally one of the stockmen took compassion on him and gave him a horse to try his skill on. The animal was a mare twenty-six years old and noted for being vicious, but Mr. Gupton undertook the task as cheerfully as though she was a four-year-old. He caught her in less an hour and in week's time had her broken gentle enough to be driven in harness to a neighboring valley and sold to an unsuspecting farmer as a four-year-old. Poor farmer! This is probably the kind of range horses that E. T. S. has been victimized with. It is sufficient to say that Mr. Gupton got all the horses he could handle the following summer and the next year he rented a meadow of 300 acres and built a good catching pen and that season handled over 400 horses.

Now as to his method. The horses were all caught without a whip, then haltered and hoppled with a cross hopple and thoroughly handled. While thus hoppled they were then belted and driven single and taught to lead, after which they were driven by the side of a gentle horse and on the fifth day of their schooling were led out and hitched to a wagon by the side of a gentle horse without being tied up or held. On the seventh day of their schooling Mr. Gupton would hitch up any two of the class that he was then handling and drive them off without any bother. I would like to ask E. T. S. what had become of the demon that was so prevalent in the range horse? I can tell you. By good, kind treatment it had been driven from the body of the horse to the body of the man that does not know how to handle a horse. E. T. S. admits that when properly bred the range horse is a "fine looker," which is quite right and he just as good as he looks. And no Eastern farmer need have any fear of any evil results in buying good sound young range horses. They are good workers, good breeders and when given the same show are as easy to catch as any other horse that is possessed of the same action.

Palo Alto Stock Farm Exhibit.

A unique exhibit is being prepared for the Stanford University museum. One whole room of the museum will be set aside for the reception of the exhibit, which is now being prepared by Superintendent Frank Covey of the stock farm, and is intended to show the history of the cultivation of blue-blooded stock in California, and more especially the part taken in it by Senator Leland Stanford as a stock fancier and turfman. All of the stock farm relics, awards and prizes will be put into the new exhibit.

"Hard" water will take up but little lead from lead pipes; "soft" water, or carbonated water, will dissolve the lead in much greater quantity.

Agricultural Review.

ALAMEDA.

APRICOTS NOT DOING WELL.—San Leandro Reporter: The way the apricot trees blossomed is causing considerable discussion among orchardists. There was but a poor showing made in many orchards and it is claimed that the crop will be very short.

SHEEP SHEARING.—Livermore Herald: Shearing has been begun on several sheep ranges in the valley and adjacent hills. It is several weeks earlier than usual, but sheep men say that the animals do not suffer from the cold when the feed is luxuriant as they do when it is short. The clip promises to be large and of good quality.

BUTTE.

PLANTING AN ORCHARD.—Red Bluff Cause, March 23: R. W. Coates is superintending the planting of the Sherwood orchard on the old Hazlett place, near Tehama. One hundred acres are being set out in fruit trees, and as it is getting rather late in the season the work is being rushed. Fifty acres are being set out in Muir peaches, 25 acres in French prunes and 25 acres in Bartlett pears. The soil is a black loam, fine for the growing of trees or most any kind of a crop. An irrigation ditch runs through the place and when planted it will make an ideal orchard.

A BIG LAND DEAL.—Red Bluff Cause, March 23: Frank Houghton and W. B. Miller of Stony Creek, came up from Corning Monday afternoon. They were accompanied by Mr. Hunt of the San Francisco Savings Union. They have purchased a tract of something over 3000 acres of the Elmore Colony land, paying about $3 per acre for it.

THE HEMP BILL.—Gridley Herald: Gov. Gage has signed the bill passed by the late Legislature authorizing the prison directors to purchase hemp for making grain bags. The bill is of great importance to Butte county—the home of hemp growing in California—as it will furnish a new market for the product, and, as most of the hemp grown in the State is grown in the vicinity of Gridley, it can readily be seen how it will help our section. The only market for the product heretofore has been in the East, and the freight rates took off a big slice of the profits.

COLUSA.

FARMERS' TRANSPORTATION COMPANY ORGANIZED.—Colusa Sun, March 20: The stockholders of the new steamboat company have incorporated with a capital stock of $25,000 and under the name of The Farmers' Transportation Co. The following were elected as directors: J. M. Miller, Grand Island; P. J. Hiatt, Knights Landing; C. L. Ralph, Sacramento; A. A. Thayer, Grand Island; E. B. Vann, Grimes. The following permanent officers were elected: J. M. Miller, Pres.; P. J. Hiatt, Gen. Mgr. and Treas.; T. H. Sullenger, Sec. There only remains forty shares of the entire capital stock unsold. The plans for the new boat are all drawn, and the company expects to have it ready for business by June 1st. The company will do a general freighting and grain business.

CONTRA COSTA.

INCREASED ALMOND ACREAGE.—Antioch Ledger: M. H. Jacobs has planted nearly 1200 young almond trees this season—the best variety known. He has now nearly fifty acres planted to bearing and non-bearing almond trees His crop last season sold for between $800 and $1000.

GLENN.

SUCCESSFUL SURGERY ON A ROOSTER.—Willows Journal: George Mellor performed a surgical operation upon one of his fine-bred roosters recently that is worthy of mention. A ball of hard substance collected in the craw of the bird, which grew to the size of a hen's egg and caused the chicken to become sick. Mr. Mellor concluded to try his hand with the knife, with the result that the gathering was removed and the rooster is now as lively as ever.

KINGS.

WHOLESALE BEE STEALING.—Visalia Delta, March 21: F. M. Chrisman and J. G. Martin, two bee keepers of Kings county, are in jail for stealing twenty-eight hives of bees from an apiarist by the name of Lane. The whole lot was stolen in a single night and hauled away in a wagon. The Kings county officers tracked the thieves several miles and found the bees still loaded on the wagon. The two men made explanation that they had bought the bees from another party and had hauled them away at 2 o'clock at night because that was the best time to take bees. A chicken roost lifter might offer a similar explanation for doing night work.

MADERA.

A PROFITABLE RAISIN CROP.—Madera Times, March 22: W. M. Hughes has ten acres of Malaga grapes from which he delivered 13½ tons of raisins to the local packing house last season. All but 4170 pounds were packed as layers and brought 6½ cents a pound, the stemmed goods being 3-crown and selling for 5 cents a pound. In round numbers he received $170 an acre for the raisins grown on that ten-acre vineyard, which emphasizes the fact that the growing of raisins in this county pays.

MONTEREY.

TO RAISE GOATS FOR MOHAIR.—Salinas Democrat: Dr. S. A. Partello, surgeon and executive field agent of the American National Red Cross, who visited Salinas last month after having devoted years to the duties of his position in the United States, Cuba and the Philippines, in company with other capitalists has bought 1000 acres of pasture in Slack's canyon, near Bradley, on the Southern Pacific Railway. They intend to raise goats for the purpose of converting their wool into cash. They have arranged to begin operations with 200 of the little animals, from the backs of which can be clipped each year a wool coupon of the value of half the outlay and still leave the original capital unimpaired.

NAPA.

HEAVY FATALITY AMONG CHICKENS.—Napa Register, March 22: A few weeks ago E. Peters, a poultryman resident on the Sonoma road, lost some three or four hundred chickens from some mysterious disease, and Sheriff Dunlap sent the stomachs of some diseased fowls to an expert chemist of San Francisco for the purpose of finding out whether or not the chickens had been poisoned. The expert says that he found absolutely nothing of poison, either organic or inorganic, in the stomachs. And so the way is now cleared for theories as to the probable cause of the wholesale destruction.

NEVADA.

SHEEP BRINGING GOOD FIGURES.—Lakeview Examiner: Notwithstanding the low price of wool, sheep are selling at good figures. Joe Hayes of Heppner has been paying $4 to $4.50 for fat wethers and shipping them to Troutdale. All the ewes have been shipped to market, feeders realizing a little over 3 cents per pound at Heppner.

BUYERS LOOKING FOR WOOL.—Heppner Gazette: The wool market has not yet opened up, and, unless the grower and buyer get nearer together, it is not likely that any sales will be made before spring. There is about 2 cents difference between them at this time, 11½ cents per pound being about the price offered. However, wool brokers are quite willing to make a liberal cash advance on wool clips, and grant the grower the privilege of saying when the price suits them.

ORANGE.

NEW CROP WALNUTS.—Anaheim Gazette, March 21: Mrs. Polhemus brought in yesterday two fully developed walnuts the size of pigeons' eggs, or larger, which she gathered from a tree in her orchard at Miraflores. The tree from which the nuts were gathered contains a dozen, all of them well developed and doing well. These are the earliest walnuts ever reported in this section.

TO RAISE LIMA BEANS.—Santa Ana Blade, March 22: Peat land farmers in the Fountain Valley district are to try an experiment this season in the raising of Lima beans, and preparation is being made to put a considerable acreage of the damp lands into that crop.

SAN BERNARDINO.

BEET CROP AND CAMPAIGN.—Chino Champion: Acting Manager E. C. Hamilton tells us that there are now planted for the Chino factory about 4500 acres, of which about 1000 acres are in Chino. About 400 acres are already thinned, which is 360 acres more than were thinned at this time last year. There are contracted and will be planted on the Chino ranch in the neighborhood of 3000 acres. From outside points, including Anaheim, Norwalk, Compton, Florence, Ethanac and Westminster, some 5000 acres will be planted. At the last named place 500 acres will be planted on the peat lands. This aggregate will, however, be increased by about 2000 acres in the event of some good, soaking rains before April 1. Reports to the sugar company show that from present appearances, with none but light showers hereafter, the Chino factory may expect 40,000 to 45,000 tons of beets for its campaign; whereas, if we have a soaking rain before April 1, with later showers, there may be expected at least 90,000 tons.

SANTA CLARA.

AUTOMATIC PRUNE PICKER.—San Jose Mercury: One of the inventions of the day which is of great importance to this county is an automatic prune picking machine, invented by W. L. Lawrence of Union district. The machine's work is not unlike a carpet sweeper's. A brush tosses the prunes into a receiver. There a lever rolls them over a grate and leaves and dirt are sifted through. When the receiver is full, a second lever raises the entire machine to the height of an ordinary fruit box, into which the prunes roll. The affair has four wheels and will work on any smooth ground.

SANTA CRUZ.

GOOD PROSPECTS FOR APRICOTS.—Watsonville Pajaronian: The prospects at present are very encouraging for a heavy apricot crop in this valley. The Green Valley district is showing up better than last year. Corralitos sends a similar report and C. O. Sillman's large 'cot orchard is rich with promise of a big crop. If the frosts are not severe during this month Pajaro valley will have a splendid 'cot crop next July.

PRUNE PORK.—Watsonville Pajaronian: Wm. McGrath has found a profitable use for small prunes. He has been feeding them to his hogs, and has been selling the hogs at fancy prices. A hog will leave other food to take steamed prunes.

SOLANO.

NEW WAREHOUSE.—Dixon Tribune: The directors of the Grangers' Business Association have decided to build a new warehouse on the site of what is now known as house No. 1. The new structure will be built on a brick or concrete foundation; perhaps both will be used in its formation, and will be as nearly fireproof as possible, being constructed of corrugated iron. The building's floor dimensions will be 60x400 feet, with a height that will considerably exceed that of the building it is to replace. The capacity of the proposed building will depend largely upon the location of the driveway, which, if built to conform with a plan which will give the greatest storage capacity, will permit of the storage of over 6000 tons of grain.

BOUNTY FOR COYOTES, GOPHERS AND BLUE JAYS.—Vacaville Reporter: The Board of Supervisors have sensibly adopted an ordinance offering a bounty for the killing of coyotes, gophers and blue jays. They might have added rabbits just as well. We think it a good move. The compensation is not large enough to encourage fraud, but it will quicken the efforts of a good many people to kill animals and birds that are entirely injurious, and give the youngsters who like to expend a little powder and shot an opportunity to secure additional ammunition. The law took effect March 25th. After that date killing an elusive coyote will be worth $2.50. The bounty on each gopher will be 10 cents and upon the death of a blue jay a reward of 3 cents will be paid out of the county treasury.

SONOMA.

CANNERY OPERATIONS.—Healdsburg Tribune, March 21: Fontana & Co. are thoroughly renovating their cannery in Healdsburg. The method of packing will be entirely different to what it has been in the past, and the packers will not be compelled to stand in slush all day. Dippers somewhat similar to prune dippers will be used, and the water will be drained off before the fruit is handled. Seats will be provided for the packers. The cannery will be thoroughly washed and cleaned each Saturday evening. There is not nearly as much packed fruit in the warehouse to-day as at this time last year, and there will not be a can of fruit on hand by the time work on this season's pack commences. The company has 700,000 empty cans now in the warehouse, and have room for 500,000 more, which will be on hand before the season opens. More people than usual will be employed this season, and there will be work for every woman and child in Healdsburg in the cannery. From present indications the fruit crop will be very heavy.

ORANGES AND LEMONS THRIVE.—Petaluma Argus, March 20: William McGrew exhibited the other day a cluster of Washington Navels grown on his ranch in Two Rock valley. There are seven large oranges in the cluster, all hanging to a small stem. The most remarkable thing about the cluster is that it was produced by a four-year-old tree which is loaded on every branch. Mr. McGrew has fifty orange trees. He also has a lemon tree which has a heavy load of lemons of immense size.

COST OF FEEDING CHICKENS.—Petaluma Argus: A correspondent furnishes the following, gleaned on a visit to the poultry farm of Mr. Charles Treat: The laying hens are supplied with an abundance of healthy food of various kinds, vegetables and otherwise. It is found that poor food, especially horse meat, produces inferior eggs. Each good layer produces about ten dozen eggs per season. Each hen costs for food per year $1 and nets its owner about 75 cents over all expenses.

TEHAMA.

A HOG-KILLING CASE.—Red Bluff News, March 20: The case of W. J. Cosgrove vs. John Kokole was called in Justice Madison's court Tuesday forenoon. Kokole is charged with having killed a number of hogs to the value of $200 that belonged to Cosgrove. Kokole endeavored to bring a counter charge that plaintiff's hogs had trespassed on his land and damaged him to the extent of $200. The court did not entertain the counter charge, but gave judgment for plaintiff to the amount of $200 and costs. The case will be carried to the Superior Court.

CANNERY FOR CORNING.—Red Bluff Sentinel: Corning will soon have a cannery and olive pickling establishment, and articles of incorporation of the Maywood Colony's Canning & Olive Pickling Co. were filed in the county clerk of Tehama county's office for the purpose of canning fruits, vegetables, meats, jams, jellies and crystallized fruits, and for pickling olives and other products and manufacturing olive oil.

TIME TO PLANT PEANUTS.—Corning New Era, March 23: Some of our colonists will remember that Dr. Blackburn and several others last year experimented with small plantings of peanuts. Wherever the nuts were properly planted and cultivated prolific yields of as fine peanuts as ever were grown even in Old Virginia—the home of the peanut in America—resulted. This matter was brought to mind by the fact that now is a good time to plant these toothsome nuts. A single handful properly planted and cared for will produce or reproduce a large sackful, or $2 worth in the market.

STANISLAUS.

LOCOMOBILE FOR A GRANGE COMPANY.—Modesto Herald: A locomobile, driven by steam generated by gasoline, has been received by the Grange Company of this place on trial. If satisfactory, purchase will be made and the horseless carriage will be utilized in the grain inspection trips made throughout the greater portion of the county by the Grange Company representatives. It is of the pattern lately exhibited here by an agent of a San Francisco firm, from whom the machine was received. The price is $950.

HEAVY KILLING OF SQUIRRELS.—Modesto Herald: During last month the total number of squirrel tails brought into the County Clerk's office, upon which the supervisors pay a bounty of 2 cents each, was 6023. This is the largest number of squirrel tails that has ever been brought in in one month.

HOG CHOLERA.—Modesto News: The hogs in the vicinity of Eugene McCabe's ranch, a few miles west of town, have had cholera for some time, which carried nearly all of them off. McCabe lost forty-eight out of a band of sixty and J. Rossi lost forty-eight hogs from the same cause. The epidemic has now been checked.

FLAX CROP PROMISES WELL.—Modesto Herald: The 160 acres of flax sowed near Turlock by the Pacific Fiber Co. did not suffer from the high winds recently, though sowing had just been completed. The flax came up in four days after sowing and is very thick. Contour furrow ditches are being run through the tract to afford some irrigation if necessary.

TULARE.

A FOUR-LEGGED CHICKEN.—Tulare Register: George Glass of Waukena has a live chicken with four legs. The chicken seems to be perfectly healthy, but the extra legs are fastened on the after part with the claws pointing upward and backward. They might be suitable for walking on a ceiling as a fly does or for swimming like a duck, but it may be doubted if they will be found very available as they are situated. The only advantage is that when the chicken comes to be eaten he will have four drumsticks instead of two, which will be an improvement.

Horse Owners! Use

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O

THE HOME CIRCLE.

Which Shall It Be?

Which shall it be? which shall it he?
I looked at John—John looked at me,
(Dear patient John, who loves me yet
As well as when my locks were jet);
And when I found that I must speak,
My voice seemed strangely low and weak:
"Tell me again what Robert said!"
And then I, list'ning bent my head.
"This is his letter:
"'I will give
A house and land while you shall live
If, in return, from out your seven,
One child to me for aye is given.'"
I looked at John's old garments worn,
I thought of all that John had horne
Of poverty, and work, and care,
Which I, though willing, could not share;
I thought of seven mouths to feed,
Of seven little children's need,
And then of this.
"Come, John," said I,
"We'll choose among them as they lie
Asleep;" so, walking hand in hand,
Dear John and I surveyed our band.
First to the cradle lightly stepped,
Where the new, nameless baby slept.
"Shall it be Baby?" whispered John,
I took his hand and hurried on
To Lily's crib. Her sleeping grasp
Held her old doll within its clasp;
Her fair curls lay like gold alight,
A glory 'gainst the pillow white;
Softly the father stooped to lay
His rough hand down in loving way,
When dream or whisper made her stir,
And huskily he said: "Not her—not her."

We stopped beside the trundle bed,
And one long ray of lamplight shed,
Athwart the boyish faces there
In sleep so pitiful and fair;
I saw on Jamie's rough red cheek
A tear undried. Ere John could speak,
"He's but a baby, too," said I,
And kissed him as we hurried by.

Pale, patient Robbie's angel face
Still in his sleep bore suffering's trace;
"No, for a thousand crowns, not him,"
He whispered, while our eyes were dim.

Poor Dick! bad Dick! our wayward son,
Turbulent, reckless, idle one—
Could he be spared? Nay, He who gave
Bids us befriend him to the grave;
Only a mother's heart can be
Patient enough for such as he;
"And so," said John, "I would not dare
To send him from her bedside prayer.

Then stole we softly up above,
And knelt by Mary, child of love.
"Perhaps for her 'twould better be,"
I said to John. Quite silently
He lifted up a curl that lay
Across her cheek in willful way,
And shook his head. "Nay, love, not thee;"
The while my heart beat audibly.
Only one more, our eldest lad,
Trusty and truthful, good and glad—
So like his father. "No, John, no—
I cannot, will not let him go."

And so we wrote in courteous way,
We could not give one child away;
And afterward toil lighter seemed,
Thinking of that of which we dreamed,
Happy in truth that not one face
We missed from its accustomed place;
Thankful to work, for all the seven,
Trusting the rest to One in heaven.

—Ethel Lynn Beers.

"The Black Domino."

Midnight clangs from the brazen throats of the city bells, from stately steeple and gray church tower over the sleeping world, but in a dainty, fire-lighted boudoir, close guarded from the wintry weather, two girls sit in the deepening hours of the night, exchanging confidences, secrets profound, such as come forth at that witching time, like owls that shun the light.

"And so, Alma, the coquette has a heart after all; the marble Galatea has come to life at the call of the gods. I prophesied it long ago, you remember."

"Don't, Stella," protested the girl, crouched on a tiger rug at her friend's feet in an attitude of graceful abandon, while the firelight played fitfully over delicate blonde loveliness. "What did I know of love in those careless days of conquest? I laughed it to scorn; a giddy young thing let loose on a world of fashion and frivolity."

"Poor Lester, could he see this transformation, he would deem himself well avenged."

The beauty sighed, and clasped two lovely arms above her head, while the streaming tresses gleamed like spun gold in the wavering light. "Dear, do not speak of that episode now; I believe that love has awakened a conscience in me, and in time will exact penance for my many sins. True, I did not care for him, poor boy, but he was too true and honest for idle trifling; to be played with for a season, and then flung aside like an old glove. I remember little Madge worked herself into a fury of passion at the time; he was her favorite, and when I sent him away she could not be brought to forgive me for many a day."

"But about this strange romance, dear, this mysterious unknown lover. I do not quite understand. That you, the cold, the conventional, could be led into such an affair, puzzles me I confess."

"Stella, I hardly know myself in these days. I feel in the grasp of something strong and overpowering. It must be fate. It has been going on for many months now, solely through correspondence, you know. Such letters, my dear, poems of passion; I am no romanticist, but those letters would touch a heart of stone, fire a glacier, tempt a virgin, I believe. We have exchanged sentiments, pictures—"

"What, Alma, you?"

"Yes—even to that folly have I stooped, I blush to say it. But let this plead for me," and rising hastily, she took a photograph from the mantel, and placed it in her friend's hands.

It was indeed a face to excuse infatuation in a foolish maid, to fire the imagination, stir the heart, strong, resolute and manly, yet darkly picturesque as Romeo in his youth.

"My dear child," protested Stella, laughingly, "take him away. I am already betrothed and in love, yet I could not answer for myself if I looked long upon him."

"And now after this strange wooing we are to meet at last. To-morrow night at the grand bal masque where all the gay world will be present."

"At a masked ball; then the mystery will be preserved to the last. By what sign or token will you know him?"

"He will seek me out in the crowd; he has written, and signed himself 'The Black Domino.'"

"Alma, this is a strange chapter of romance you are telling me; one would think we had been transported back to the earlier centuries; the days of troubadours, and gallant cavaliers. Have a care, or you will be spirited away against your will, here in modern Gotham. What a column it would make for the papers."

At that moment, the door burst open without warning, and a tall girl of about fourteen bounced into their midst; a girl with glorious great eyes, and black elf locks fluttering over her white wrapper. "Oh, girls," she cried without preface. "Do get me an invitation to this masquerade; I'm crazy for a sight of it; and mother won't hear a word."

"Madge," said her sister, severely. "Go to bed this instant, and put such wild notions out of your head; when you are fairly out it will be time to talk."

"Hateful thing," pouted the gypsy, saucily. "Some day I'll be even with you for this. Beware," and, with a tragic gesture, she flashed from the room impetuously as she had come.

"So that is Madge, fresh from boarding school."

"Yes, madcap Madge, I call her; the torment of my existence."

"Alma," oracularly; "some day that hoyden will dispute sovereignty with us all. With her goddess height, gypsy beauty and great dark eyes, there's no knowing what may happen."

Alma yawned carelessly. "Well Stella, let's get to bed; to-morrow night comes the masquerade."

The bal masque was the event of the season in fashionable circles, for only the elect were admitted within the sacred precincts, and invitations were not to be had for the asking. It was a theme for idle tongue and pen, many a month in the gay metropolis, where throughout the winter one pleasure succeeded another with kaleidescopic rapidity.

A pageant of color and splendid movement, of courtly knight and stately dame, princess, peasant and clown, a "dream of fair women," a reminscence, of earlier centuries, in scenes and climes more picturesque than these days of modern Gotham. Alma Douglas as a French marquise of the old regime was a vision of surpassing loveliness, with her high powdered hair, rich costume, patrician grace and elegance, and seemed to have stepped from the frame of some old master, so fair a representation was she of the famed French beauties of those days.

Yet for once in her gay life this Arabian Nights scene of enchantment served but has the background for a drama that was shortly to be enacted; for once the heart of the spoiled beauty beat fast under her jeweled bodice, as through the bright moving maze of figures she looked for the coming of one whose presence was to make her happiness.

It had not been so in the old days, when she held her little court, haughty and invincible, untouched by a trace of tenderness or emotion, scornful of its display in others. But now, like a foolish virgin, she has yielded all to the touch of a strange hand; pales and trembles, like the weakest of her sisters, before a passion beyond her own fathoming, that stirs strange hopes and longings in her awakened nature.

The evening was well advanced and the dancing at its height, when a tall black domino sought her out, and with a courtly bow claimed her for the coming waltz. She could not doubt his identity, deny his right, and as they swung out into the motley maze of dancers, to the inspiriting strains of the Hungarian band, as she leaned upon the strong arm and yielded to his guidance, her heart beat high with eager anticipation, and she dared not meet the full flashing glance of the dark eyes that sought her own.

Speech was not needed at the moment; it would have seemed but a rude awakening to the dream in which she lived, moved, and had her being, the rich, intoxicating music to which their pulses beat in accord served as an interpreter between them, heightened their mood of exaltation.

Many turned to look upon the young couple with eager curiosity, the stately black domino and daintily clad French marquise, as they swung and swayed in the changing dance, the incarnation of supple grace and poetry.

At last he led her away from the brilliant ballroom to the dim-lighted conservatory, where stray couples, or young lovers paced up and down under the stately palms, and inhaled the voluptuous incense of rare flowers, blooming with all the luxuriance of tropic climes.

He sought a secluded corner in its green recesses, and as she sank down upon a rustic seat, removed the light mask and turned upon him her wondrous face, alight with a new radiance, small marvel that the man caught his breath for a moment and stood speechless before her. "At last," he murmured under breath. "Ah! if you but knew what this moment means to me, the happiness you have given me this night. That you, in your radiant youth, should stoop to love like mine; lean from your lofty station to the poor suppliant at your feet. It seems scarcely credible."

"You speak in engimas, sir," she said, gently. If your station be, indeed, so lowly, I marvel how you obtained entrance here to-night."

"A mystery of the masquerade, dear one, which you must not seek to fathom. Love finds a way and laughs at bolts and bars. I fear nothing, save the light in those blue eyes, and the words that fall like music from those rosy lips. Dare I believe in your presence the written vows that have brightened my solitude so many weary months? Dare I to express to you the hopes I have cherished, the dreams I have nursed, of this hour so long in coming?"

"You dare many things, it seems; you are not lacking in courage or enterprise. I am here at your bidding, this should content you." She spoke with a calm composure that belied her fluttering heart, and the rare color that came and went in her dimpled cheek; she would not surrender all in the first moment to this imperious stranger, who had so taken her heart by storm. "The moment for reveal-

MOTHER AND CHILD

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ment has come. A truce to mystery, sir; I would see the face of the man who has dared so strange a wooing in in these prosaic times."

"And must I risk the happiness of this moment?" he muttered, while his dark eyes glowed strangely through the enshrouding mask.

"Does your love then dread the light of day—a possible disillusion? Unmask, sir, I am not to be won by trickery; unmask—I exact it as my due!" She spoke hurriedly, a sudden tremor seized her in the presence of the silent masked stranger; the voices of the dancers had died away, and they were alone in the great flower-scented conservatory. The wild strains of the Hungarian Czardas came to them softened by the distance.

For all answer the man fell at her feet, caught her hands to his lips and kissed them wildly, passionately. A moment more and he had gone, passed from her life forever, it may be; but she clung to the domino, it slipped from his shoulders and fell to the ground, and freed from all disguise, a young cavalier, in the picturesque costume of the sixteenth century, stood revealed to her eager sight.

She gave one glance of bewilderment at the spirited face and flashing eyes of her lover, then springing to her feet with a startled cry, caught him by the shoulders.

"Madge, you wretch. What mad escapade is this?"

"The black domino is not a bad disguise, eh Alma?" was the saucy response. "Under cover of the mask the wildest romance became possible. At school they always elected me to play the lover, so I'm not quite a novice in the role; but this exceeded even my expectations. It was as good as a play." And the graceless girl, as handsome a young blade as one would wish to see, seated herself astride a chair and burst into uncontrollable laughter.

"Madge—" shortly; "explain yourself this moment. How came you here in this disguise? What know you of the black domino? Speak, speak—" and she struck her sharply across the cheek with her jewelled fan.

"My dear little sister, calm your anger, and listen to me. I see that you do not quite comprehend the situation. You are not even content with the lover presented to your view, and yet, on my honor, he's not so bad a fellow."

"My lover?" disdainfully.

"The only lover you can claim, Alma, since you sent poor Lester into exile, to which folly this little masquerade is directly due."

"What do you mean, Madge?"

"Strictly speaking, then, I have played the lover for the past six months, and got you fathoms deep in love to boot, through certain impassioned epistles entrusted to the mail."

"You confess it?"

"More, I glory in it; but I must be modest. I had a companion in inquity, my school chum, who helped me out with her literary gifts; and during study hours we planned the whole conspiracy; then I am as clever as a forger at handwriting—"

"Go on," commanded Alma, with the calmness of mounting anger; while shame, bewilderment and fury struggled for the mastery, as the deep-laid scheme was revealed to her view.

"Well, Alma," continued the infatuated girl. "There is no lover, there is no romance, it is all a chimera, a fantasy, a delusion of the senses. Those letters so tenderly cherished, so promply answered, are now valueless as so much waste paper; the photograph of the handsome man I picked up somewhere. Now do you understand?"

"Miserable, shameless girl," cried Alma, finding voice at last. And you feel no regret for this vile conspiracy, this hair-brained escapade? Laugh while you may, when I tell your story at home, you may find fault that the way of the trangressor is hard."

"Alma," retorted the young sinner, with cool effrontery. "Has it never occurred to you that in giving me up to justice you also expose your own follies? The worst they can do is to pack me off to a convent, like a child punished for some misdemeanor. But how will it sound to the world when it becomes known that Alma Douglas, the haughty belle and beauty, had been tricked into so foolish an entanglement through love of romance?"

For once the spoiled beauty had found her match, was fairly checkmated; and by her own little sister, a chit of a schoolgirl, whose ears she would gladly have boxed, yet whose audacity defied all discipline.

She leaned her head on her arms and gave away to tears, tears of shame, disillusion, anger, who can say? At this unlooked-for finale to the masquerade, the saucy gallant softened and took a step nearer; then as voices approached, hurried on mask and domino, and held out his arm, saying, "May I have the honor of this dance, madam?" and led her away before she realized what had happened. —Julia M. Knight.

Jim Crow and His Brothers.

Three tame crows were obtained from the parents some three months since, when they were about one month old, and have proven very interesting objects. They are so entirely tame that they come flying along wherever they may be, at the call, "Come, Jim come on," lighting upon the shoulders or the lap and manifesting a desire to be fondled. When we reach home in the afternoon, they seem to be watching for the carriage and are on hand at once, greeting us with croaks and caws, and with lowering and shaking of the wings.

It is very interesting to note their power of observation and their intelligence. They had always seen us wearing a straw hat or hatless. We were surprised one day to note that they manifested some fear, refusing approach, which was understood when we remembered that a cap was worn. Going within, we reappeared wearing the hats and carrying the caps. Calling them to us, we permitted them to see the change made from hat to cap, and vice versa; and the result was perfectly satisfying.

It occurred to us they might appreciate roasted peanuts. We gave one to each, with which they played for some time, then discarded for something else. Gathering up the peanuts, we called them, and as they intently watched the proceeding, opened one and fed the contents to them. They then, very eagerly, received each a peanut, which was placed beneath their feet and picked open. Since, they have manifested great fondness for these, and dive their heads to the bottom of our pockets to obtain them, always searching for the peanuts in the one side-pocket in which we originally showed them they were placed.

They were tried, also, with some wild ripe cherries, for which they did not seem to care, but, filling their mouths with them, emptied them into our slippers, and were ready to repeat it as often as we removed the slippers to cast them out.

They are as familiar with our visitors as ourselves, but quickly fly away upon the appearance of a stranger presenting the aspect of a tramp.

They mix freely among our own, but manifest fear upon the appearance of a strange horse.

Ordered from the portico, they scold very loudly, and continue this as they are driven off, being absolutely disobedient to the word.—Exchange.

DOMESTIC ECONOMY.

Various Methods in Which Prunes May Be Used.

NUMBER VI.

PRUNE SAUCE.—Use only the best selected prunes. Clean by putting them into warm water; let them stand for a few minutes, rubbing them gently between the hands to make sure that all dust and dirt is removed; rinse, and, if rather dry and hard, put them into three parts of water to one of prunes; cover closely and let them simmer for several hours. If the prunes are quite easily cooked, less water may be used. They will be tender, with a thick juice. The sweet varieties need no sugar whatever. Many persons who can not eat fruit cooked with sugar can safely partake of sweet prunes cooked in this way. A slice of lemon added just before the prunes are done is thought an improvement.

PRUNE WHIPS.—Steam one pound of prunes until soft enough to rub through a colander, then add a small teacup of sugar. Beat the whites of five eggs to a stiff froth, beat in the prunes, bake about ten minutes, serve cold with whipped cream.

JELLIED PRUNES.—Prunes molded in clear jelly make a tasty and sightly dessert. Fruit of large size should be chosen and after washing in warm water should be soaked in clear cold water for twenty-four hours, then cooked in a double boiler until tender but unbroken. Sweeten to taste ten minutes before taking from the fire, then drain. The syrup is to be put aside and then used next day as a sauce for the molded cornstarch blanc-mange. Arrange a layer of the prunes in a wetted mold and pour in just enough liquid lemon or wine jelly to cover. When this layer is firm fill in the mold with the prunes, arrange them prettily around the sides, then fill with the jelly and put away in a cold place to stiffen. In serving garnish with whipped cream.

WITH CLARET AND SPICES.—Place one quart of prunes in a stewpan and add one-half pint of cold water. Let them simmer for ten minutes, then add one pint of good old clàret wine. Let them simmer another fifteen minutes; then add one-half cup of sugar and one teaspoonful of allspice and one of cloves. Allow them to cook ten minutes longer over a brisk fire, and if the prunes absorb too much of the liquid add a little more wine. Let them cool and serve cold. Anybody will eat prunes cooked in this way.

WITH SALT AND SUGAR.—Place one quart of prunes in a stewpan, add one pint of water and an even tablespoonful of salt. Boil or stew fifteen minutes, and then add one-half cup sugar and stew ten minutes longer. Serve cold.

(TO BE CONTINUED.)

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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock, A. M., Wednesday, the 10th day of April, 1901.

I. C. STEELE, President.
CHARLES WOOD, Secretary.

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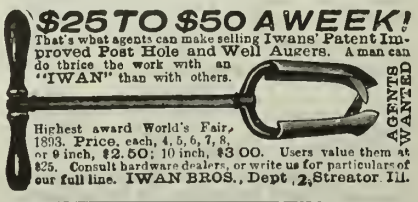

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 27, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	80½@80¾	80¾@81
Thursday	81⅛@80½	80¾@80⅜
Friday	80 @80½	79⅞@80⅜
Saturday	80½@80¾	80¼@80¾
Monday	80⅝@80⅜	80⅝@80⅜
Tuesday	80⅜@80⅛	80⅛@80⅜

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	6s 1 d	6s 0¾d
Thursday	6s 1¼d	6s 1⅛d
Friday	6s 0¾d	6s 0½d
Saturday	6s 0¾d	6s 0½d
Monday	6s 0¾d	6s 0⅝d
Tuesday	6s 0⅝d	6s 0½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 02 @1 02½	1 05¼@1 05½
Friday	1 02¼@1 03¾	1 05 @1 05¾
Saturday	——@——	1 05¾@——
Monday	——@——	1 05½@——
Tuesday	——@——	——@——
Wednesday	1 03⅛@1 03½	1 05¾@1 05⅞

WHEAT.

Aside from the speculative deal in May wheat, the local market has presented very little of interest since last review. Trading in May wheat was much less active than preceding week, and there were no pronounced fluctuations in prices for same. May continues very close to December. Under normal conditions, there should be a difference of 2@3c. more in favor of December wheat than is being experienced in the pending deal. If December option was the bone of contention instead of May, the gap in speculative values would in all probability be as much too wide consistently as it is now too narrow. The spot market has ruled slow, and, beyond a little easier freight market, has been devoid of encouraging feature. While ocean freight rates are slightly lower, the supply of ships for the present and the near future is too light to hope for much immediate relief from this source. Advices from Argentina, from Australia and from India report heavier yields of wheat than last year. Harvesting is now under headway in India, and is completed in the southern hemisphere. Without a heavy shortage in European crops, of which there are no present indications, wheat values are not likely to touch high levels the current year. At the same time, it is difficult to see how prices can be crowded much lower than they have been during the season now drawing to a close. The United States visible supply east of the Rockies showed a decrease of 410,000 bushels, and is now reported at 54,714,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.02@1.03¾c.

December, 1901, delivery, $1.05@1.05¾.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.03⅛ @ 1.03½c; December, 1901, $1.05¾ @1.05⅞.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	96¼	@ 98¾
Oregon Valley	97½	@1 00
Washington Blue Stem	97½	@1 02½
Washington Club	96¼	@1 00
Off qualities wheat	92½	@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	-s-d@-s-d	6s3½d@6s4d
Freight rates	40@41¼s	36¼@37½s
Local market	$0 96¼@1 00	$0 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

While there are no heavy spot supplies, there is an abundance for all immediate wants. Prices are without quotable change. Stocks are largely the product of local mills. In most of the outside sections which ordinarily furnish flour to this market, wheat is now relatively higher than here.

Superfine, lower grades	$2 25	@2 40
Superfine, good to choice	2 50	@2 75
Country grades, extras	3 00	@3 25
Choice and extra choice	3 25	@3 50
Fancy brands, jobbing	3 50	@3 65
Oregon, Bakers' extra	2 75	@3 15
Washington, Bakers' extra	2 75	@3 25

BARLEY.

The improved condition noted in last issue as prevailing in the market for feed barley continued into the current week. There has been scarcely any barley obtainable under 75c, and holders of choice feed were in numerous instances contending for 80c, but this was not a quotable figure. Values for brewing and export grades did not show appreciable improvement, but are more apt to rule firmer than to go lower during the balance of the season. At the improved prices recently established for lower grades, barley is still by long odds the cheapest feed cereal on the list. The Panama steamer sailing on 23rd inst. took 500 tons brewing barley for New York.

Feed, No. 1 to choice	76½	@ 78¾
Feed, fair to good	72½	@ 75
Brewing, No. 1 to choice	80	@ 87½
Chevalier, No. 1 to choice	——	@——
Chevalier, No. 2	——	@——
Chevalier, poor	——	@——

OATS.

Asking rates remain much the same as for some time past, but movement is slow and the market cannot be termed firm at the prevailing figures, especially for common to medium grades, which are most in evidence. There were further arrivals of Eastern oats of considerable magnitude this week, representing deliveries on Government account.

White Oats, fancy feed	1 42½	@1 47½
White, good to choice	1 30	@1 37½
White, poor to fair	1 20	@1 27½
Gray, common to choice	1 20	@1 37½
Milling	1 42½	@1 47½
Surprise, good to choice	1 42½	@1 50
Black Russian	1 12½	@1 30
Red	1 20	@1 45

CORN.

Values for this cereal show steadiness, but there is not much doing, buyers operating slowly and lightly at full current rates. Spot stocks are of small volume, and are principally Eastern corn, purchased prior arrival.

Large White, good to choice	1 15	@1 17½
Large Yellow	1 15	@1 17½
Small Yellow	1 50	@——
Eastern, in bulk (carload lots)	1 08	@1 10

RYE.

A little more inquiry has been experienced for this cereal, but prices have developed no quotable improvement.

Good to choice, new	80	@ 82½

BUCKWHEAT.

Stocks are light and in few hands. Trade is of very small volume, and there is little other than asking rates upon which to base quotations.

Good to choice	1 90	@2 00

BEANS.

Market for most white beans shows firmness, with supplies light. Stocks have been further materially reduced by the awarding the past week of a Government contract, mainly for Large Whites or Lady Washingtons. The quantity of Lima beans offering in this center is of very moderate volume, and the same are being quite steadily held. In colored beans there is not much doing, and for Bayos and Pinks, which constitute the bulk of present supplies, the market is easy in tone, without any appreciable changes in quotable rates.

Pea, fair to good, 100 lbs	——	@——
Small White, good to choice	4 75	@4 90
Lady Washington	4 00	@4 15
Butter	4 25	@4 50
Pinks	2 00	@2 15
Bayos, good to choice	2 65	@2 75
Reds	3 00	@3 25
Red Kidney	4 00	@4 25
Limas, good to choice	5 75	@5 85
Black-eye Beans	2 75	@3 00
Horse Beans	1 75	@2 00
Garbanzos, large	2 00	@2 25
Garbanzos, small	1 25	@1 75

DRIED PEAS.

Millers and jobbers are fairly well stocked with Eastern product, and there is in consequence little inquiry for the time being for domestic. Market is quiet for Green at unchanged quotations and weak for Niles.

Green Peas, California	2 65	@2 80
Niles Peas	1 60	@1 75

WOOL.

While there is not much doing in this center, occasional transfers are being made, mostly to scourers and more the result of selling pressure than of any special inquiry from buyers. Some wools are being bought in the interior at slightly higher figures relatively than are nominally current here. A shipment of 356 bales scoured wool was made per Panama steamer this week for New York.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarse to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

Stocks are light, growers having very few hops at present, and supplies in the hands of jobbers being of very moderate volume. Quotations are without change, but values are necessarily largely nominal at this date.

Good to choice 1900 crop	13½	@16

HAY AND STRAW.

Business doing in hay is at much the same range of prices as have been prevailing for some weeks past, but demand is far from brisk, most buyers operating only for immediate needs. Market is barely steady for choice to select, and weak at the quotations for the lower grades. The movement in straw is slow at generally unchanged rates.

Wheat	8 00	@13 00
Wheat and Oat	8 00	@11 50
Oat	7 00	@11 00
Barley	6 00	@ 8 50
Volunteer	5 00	@ 7 00
Alfalfa	8 00	@ 9 50
Stock	5 00	@ 7 00
Compressed	8 00	@12 50
Straw, ₱ bale	40	@ 47½

MILLSTUFFS.

Market for Bran has been slightly firmer than preceding week, owing more to light stocks in few hands than to active demand. Middlings were steadily held, with offerings only moderate. Shorts were without quotable change. The last quoted advance on Rolled Barley was well sustained. Milled Corn is lower.

Bran, ₱ ton	14 50	@15 00
Middlings	17 00	@19 00
Shorts, Oregon	15 50	@17 00
Barley, Rolled	16 50	@17 00
Cornmeal	25 00	@——
Cracked Corn	25 50	@26 00

SEEDS.

Immediate stocks and offerings are light of all descriptions of seeds quoted herewith, and there is consequently no opportunity for any noteworthy trading. In quotable values there are no changes to record.

	Per ctl.	
Mustard, Trieste	——@——	
Mustard, Yellow	——@——	
Flax	2 50	@3 00
Alfalfa, Utah	9	@ 9½
Alfalfa, California	8	@ 8½
	Per lb.	
Canary	3½	@ 4
Rape	2	@ 2½
Hemp	3	@ 3½

BAGS AND BAGGING.

Market for Grain Bags has developed no changes of noteworthy importance since last report. There is a moderate business doing at steady rates, mostly in new Calcuttas for forward delivery. Wool Sacks are offering at unchanged figures, and are meeting with fair inquiry on account of Spring clip.

Calcutta Grain Bags, buyer June-July	6¾	@ 7
Calcutta Grain Bags, spot	6⅝	@ 6¾
San Francisco Grain Bags, 22x36, spot	6⅝	@—
State Prison Bags in lots of 2000, ₱ 100.5	65	@—
Wool Sacks, 4 lbs	32½	@35
Wool Sacks, 3½ lbs	30	@32½
Fleece Twine	7½	@—
Gunnies	—	@12½
Bean Bags	4⅜	@ 5¼
Fruit Sacks, cotton	6½	@ 7¼

HIDES, PELTS AND TALLOW.

The market is quiet throughout. Values for Hides are fairly steady, but demand is not particularly brisk. Pelts move slowly at current figures. Tallow is in fair request at unchanged values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	8½	7
Light Steers, under 48 lbs	8	6½
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	6½
Wet Salted Kip	9	7
Wet Salted Veal	9	7
Wet Salted Calf	10	9
Dry Hides	15½@—	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 50
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	70	@ 90
Pelts, medium, ₱ skin	50	@ 65
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4	@ 4¼
Tallow, No. 2	3¼	@ 3¾
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Although there is no likelihood of there being any new Extracted honey on market before the middle of May, and no new Comb of consequence before June, the market presents a weak tone, in consequence of the good prospects for coming yield. Stocks are small, but holders are anxious to realize, and are granting concessions rather than miss sales.

Extracted, White Liquid	6	@ 6½
Extracted, Light Amber	4½	@5
Extracted, Amber	4	@ 4½
White Comb, 1 lb frames	12	@13
Amber Comb	9	@11
Dark Comb	6	@ 8

BEESWAX.

There is not much offering. The transfers effected are at generally unchanged rates.

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

Market is ruling rather quiet for Beef, but at the same time current values are being well sustained. Some changes have been made in quotable rates for Mutton since last review, market being rather weak. Lamb is offering in sufficient quantity for the demand at the prices now ruling. Veal is without quotable change, but is not in such large receipt as a few weeks ago. Hog market shows decided firmness, with quotations slightly advanced. Receipts of domestic are on the increase, but there are no Eastern now coming forward.

Beef, first quality, dressed, net ₱ lb	7¾	@ 8
Beef, second quality	7½	@ 7¾
Beef, third quality	6½	@ 7½
Mutton—ewes, 7½@8c; wethers	8	@ 9
Hogs, hard grain fed, medium	6¾	@—
Hogs, small, fat	6⅜	@—
Hogs, large, hard	6	@—
Hogs, feeders	—	@—
Hogs, country dressed	7¾	@ 8
Veal, small, ₱ lb	8	@ 9½
Veal, large, ₱ lb	8	@ 9
Lamb, spring, ₱ lb	10	@10½

POULTRY.

Prices of old chickens did not rule quite so high as preceding week, the market being a little better supplied. Young chickens, medium size to full grown, continued to command good figures. Small Broilers were in light request and ample supply. Ducks continued scarce and high. Geese and Goslings in good condition sold to very fair advantage. Turkeys were not much sought after. Pigeons brought about as good prices as last quoted.

Turkeys, live hens, ₱ lb	12	@ 13
Turkeys, live gobblers, ₱ lb	10	@ 11
Hens, California, ₱ dozen	5 00	@6 50
Roosters, old	4 50	@5 00
Roosters, young (full-grown)	7 00	@8 00
Fryers	5 50	@6 00
Broilers, large	5 00	@5 50
Broilers, small	3 00	@4 00
Ducks, old, ₱ dozen	5 50	@6 50
Ducks, young, ₱ dozen	8 00	@9 00
Geese, ₱ pair	1 50	@1 75
Goslings, ₱ pair	2 50	@3 00
Pigeons, old, ₱ dozen	2 00	@——
Pigeons, young	2 25	@2 50

BUTTER.

Market has been tending to lower levels, with shipping demand less active, and local dealers as a rule operating very lightly. Packing and storing will very soon be necessary to relieve the market of surplus stocks of fresh. There is some held butter from last year still offering.

Creamery, extras, ₱ lb	16½	@—
Creamery, firsts	14½	@—
Creamery, seconds	—	@—
Dairy, select	14½	@—
Dairy, firsts	13	@—
Dairy, seconds	12	@—
Dairy, soft and weedy	—	@—
Mixed store	11	@—
Creamery in tubs	17	@—
Pickled Roll	17	@—
Firkin, California, choice to select	16	@17
Firkin, common to fair	14	@15

CHEESE.

Demand is sufficient to absorb the domestic cheese now coming forward about as rapidly as it is received. Market is firm at current rates. Stocks of Eastern cheese in this center are light.

California, fancy flat, new	9	@—
California, good to choice	8½	@—
California, fair to good	8	@—
California Cheddar	—	@—
California, "Young Americas"	9	@ 9½

EGGS.

Buying on cold storage account continues active, with market firm at prevailing rates, especially for store-gathered eggs, these now showing good average quality, and consequently are readily taken on cold storage account. At some interior points

relatively higher prices are being paid than are quoted here.

California, select, large, white and fresh.	14½@15
California, select, irregular color & size.	13½@14
California, good to choice store	13 @14
Eastern, as to section and grading	— @—
Eastern, cold storage	— @—

VEGETABLES.

Onions now offering are mainly Australian product, and these are in the main very steadily held, having been mostly purchased by jobbers prior arrival. More Australian onions are looked for on next steamer, due April 8th. Most Spring vegetables showed increased receipt, and tendency of market was to lower figures. Asparagus is selling at a very wide range of prices, with corresponding difference in quality of offerings.

Asparagus, ₱ box	75 @2 00
Beans, String, ₱ lb	6 @ 8
Cabbage, choice garden, ₱ 100 lbs	75 @1 00
Cauliflower, ₱ dozen	50 @ —
Egg Plant, ₱ lb	12½@ 15
Garlic, ₱ lb	2½@ 3½
Onions, Yellow Danver, ₱ cental	2 00 @3 50
Onions, Australian, ₱ cental	3 50 @4 00
Peas, Sweet, garden, ₱ lb	2 @ 3
Peppers, Green Chile, ₱ lb	8 @ 12½
Rhubarb, ₱ box	75 @1 25
Squash Summer, ₱ box	1 00 @1 25
Squash and Pumpkin, ₱ ton	—@—
Tomatoes, ₱ crate	75 @1 25

POTATOES.

There is no improvement to note in the condition of the potato market. Old are offering freely for this late date, with demand slow. While quotations are without important change, prices are irregular, concessions to buyers being the rule rather than the exception. New potatoes are arriving in moderate quantity, and in about a month will be in ample supply for all needs. Sweets were offered freely and at low figures.

Burbanks, River, ₱ cental	25 @ 60
Burbanks, Petaluma-Tomales, ₱ ctl.	35 @ 60
Burbanks, Salinas, ₱ cental	—@—
Burbanks, Oregon, ₱ cental	50 @ 85
Early Rose	80 @ 90
Garnet Chile, ₱ cental	75 @ 90
Peerless, ₱ cental	85 @1 00
Sweet Potatoes, Yellow, ₱ cental	50 @ 65

The Fruit Market.

FRESH FRUITS.

Apples now offering are mostly of supplies in cold storage. These are being in the main steadily held, in some instances above quotable rates, but movement is slow and demand is not likely to improve from this time forward. Strawberries have arrived in light quantities from various points, selling at a wide range, from $4 per drawer for first receipts in prime condition down to 75c. per drawer for later arrivals of Longworths in merchantable shape. Some Longworths arriving in poor order failed to command the lower figures. Molindos were offered down to 30c. per drawer.

Apples, fancy, 4-tier box	1 50 @ 2 00
Apples, good to choice, ₱ 50-lb box.	85 @ 1 00
Apples, common to fair, ₱ 50-lb box.	60 @ 75

DRIED FRUITS.

In all essential respects the market for cured and evaporated fruits remains practically as last noted. There is no active movement in dried fruits of any description. Jobbers are forwarding some fruit outward to different points, mainly assorted cars, but the aggregate of shipments is light. In quotable rates there are no special changes to record, but it is much of a "go-as-you-please" market on most kinds as regards prices. It is difficult to give quotations based on other than asking rates for standard qualities. Sales effected of most kinds of dried fruit are at entirely too irregular figures to cite the same as forming a correct basis of quotations, or as giving a clear-cut idea of values. Peaches have been receiving more attention, perhaps, than any other variety, but at no improvement in prices. Peaches offering are showing a wide range in quality. There were samples of unpeeled peaches exhibited this week, the best of which would have been cheaper at 6c than the poorest stock at 3c. Apples are as weak and slow as previously noted. Apricots are offering at concessions, with the bulk of supplies of ordinary quality, and some offerings decidedly inferior. Stocks of Figs in the hands of growers and jobbers are not now of heavy volume, but will likely prove sufficient for all probable demands during the balance of the season. In the Prune market there is no active movement. The small odds and ends outside of Association control are rapidly disappearing. Some 100-110's were closed out this week at 1½c. The inquiry existing is mostly for 50-60's, 60-70's and 100-120's. It is unofficially announced that the Cured Fruit Association has made another cut on export prices, leaving domestic rates unchanged. A dispatch from San Jose, under date of March 26, says: The resolution adopted by the directors of the California Cured Fruit Association, cutting prices on prunes to be shipped abroad, was made public today. By its terms, prices of all prunes from 40 to 90 in size, intended for export to Europe, Australia, New Zealand, China and Japan, are reduced to the 2-cent basis. On this basis 40's to 50's will be sold at 3¾c a pound; 50's to 60's at 3¼c; 60's to 70's at 2¼c; 80's to 90's at 1¾c.

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EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½@ 6
Apricots, Royal, choice, in sacks, ₱ lb	6 @ 6½
Apricots, Royal, fancy	7 @ 8
Apricots, Moorpark	9 @10
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	2½@ 3½
Figs, White, fancy pressed	6 @ 7
Nectarines, ₱ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, choice	4 @ 4½
Peaches, peeled, in boxes	.11 @14
Pears, unpeeled Bartletts, halved, fancy.	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, White and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	3½@ 4½
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	1½@ 2½
Figs, White	2½@ 3½
Peaches, unpeeled	3 @ 5
Pears, prime halves	2 @ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 6¼c.; 50-60s, 4¼c.; 60-70s, 3¾c.; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100ss 2¼c.; 100-120s, 1½c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

There is not much doing locally or on Eastern account. There is some outward movement to Australia and British Columbia at the special concessions granted the export trade. Association rates remain unchanged. The Association reports that on the middle of the current month there were 1488 cars of Raisins on hand, out of a total of 3434 cars of last crop. Of present holdings it is understood that about one-half is low-grade fruit which will probably be utilized for brandy.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ₱ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ₱ box	1 60 @—
do do 2-crown, ₱ box	1 50 @—
(Usual advance for fractions.)	
Loose Muscatel, 4-crown standard, ₱ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ₱ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ₱ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Heavy quantities of low-grade Oranges have been dumped on the market this week, mainly through the auction room and at low figures. Twelve to fifteen carloads of citrus fruit, mainly Oranges, were auctioned at a time, Navels selling within range of 50c@$1.50 per box, the bulk of the auction business being within range of 75c@$1.25. The Lemons at auction sold mainly within range of 75c@$1.35 Common Lemons were in heavy stock and poor demand. Limes were in light stock and high.

Oranges—Navel, ₱ box	75@2 00
Seedlings, ₱ box	65@1 25
Tangerines, ₱ half box	75@1 25
Grape Fruit, ₱ box	75@1 50
Lemons—California, select, ₱ box	1 75@2 00
California, good to choice	1 25@1 50
California, common to fair	50@1 00
Limes—Mexican, ₱ box	8 00@—
California, small box	—@—

NUTS.

Almonds are offering at much the same easy rates as previously noted. The quantity is not heavy but the demand is light. Walnuts of choice to prime quality are practically out of supply and are no longer quotable. Business in Peanuts is at unchanged rates.

California Almonds, shelled	18 @22
California Almonds, paper shell, ₱ lb	12 @13
California Almonds, soft shell	9 @11
California Almonds, hard shell	6 @ 7
Walnuts, White, soft shell	—@—
Walnuts, White, California, standard	—@—
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

There is very little wine of last year's vintage now in first hands, and consequently no opportunity of consequence for wholesale transactions. Market shows decided firmness, quotations remaining nominally 19@22c. per gallon for dry wines of last year's vintage. A noteworthy feature of the week was the shipment per Panama steamer, sailing on 23rd inst., of 345,753 gallons wine for New York. This is the heaviest shipment made in a long time, and exceeds the quantity forwarded outward by water during entire month of February.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	91,302	4,794,381	4,617,663
Wheat, centals	40,375	6 184.259	5,006,751
Barley, centals	33,000	3,181 587	4,471,247
Oats, centals	8,520	559,116	652,813
Corn, centals	1,145	87,924	100,735
Rye, centals	990	105,512	91 752
Beans, sacks	1,103	525,745	330,624
Potatoes, sacks	26,237	1,272 651	997,069
Onions, sacks	3,523	150,405	137,421
Hay, tons	2,990	127,485	125,115
Wool, bales	1,038	25,695	37,226
Hops, bales	89	7,327	9,268

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	60,644	2,765,738	3,160,528
Wheat, centals	111,196	5,963,021	4,413,684
Barley, centals	55,974	1,899,761	3,571,837
Oats, centals	...	47,821	37,238
Corn, centals	..	2 651	15,849
Beans, sacks	105	11,543	21,785
Hay, bales	27	82 921	107,5 3
Wool, pounds	...	409,631	4,324,433
Hops, pounds	339	532,727	966,512
Honey, cases	...	1,695	3,398
Potatoes, pack's	5,662	115,746	61,580

California Dried Fruit at New York.

NEW YORK, March 27.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Business light and at generally unchanged values.

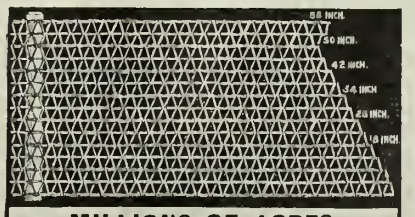
Prunes, 3½@7c.

Apricots, Royal, 7½@12c: Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.

Canneries Form a Combination.

A deal of considerable importance in fruit canning circles was consummated at Sebastopol last week. The deal is the combination of the large canneries at Sebastopol, Sacramento and Emeryville under the corporate holdings of the Central Canning Company. F. B. Wetherbee, who has superintended the business for the Sebastopol cannery for several years, will be the general manager of the new company. The general offices of the company will be located in San Francisco.



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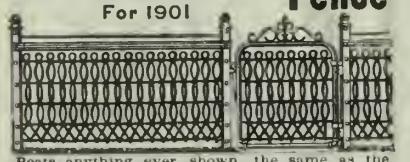

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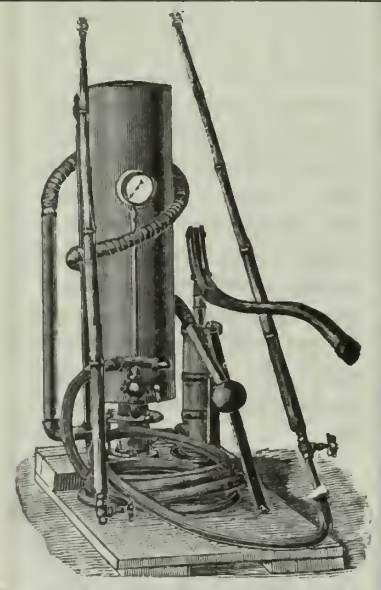

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Breaking Mules.

Kentuckian gives the Western Agriculturist his method of breaking mules, as follows: I have handled a good many of them. First of all, I gentled them. I went into the stable containing a carload, being very careful not to frighten them—found a gentle one, rubbed him on the nose, patted him on the back and neck, then gave a good currying on fore part of body. Before long others came around to see what was going on and I soon had ten or twelve to work on. This was repeated every day, and often several times a day, as I fed them. When I sold them they were so gentle that I could go into the stable and halter them; the purchaser selling them in Atlanta as broke mules. I bought when colts and sold when two years old.

As to the best place to give Jack his first lesson I prefer the turning plow, next the harrow. After you have gentled Jack, slip on a strong bridle with a new ½-inch rope 12 feet long, tied to inner ring of bit. Pass it under chin and through outer ring of bit, making a curb. Now lead Jack out of stable. As a general thing he will come out swiftly. Let him pass full length of rope, then give him a quick, firm jerk, bringing his head toward you. Keep your eye on him and as he tries to make off again repeat this. Remember that as long as his head is toward you you are safe and so is Jack; the reverse of this might be disastrous. Now lead him up and down the lot three or four times and put the harness on gently, rubbing him on the back. Lead around several times to get him used to the rattling of the harness. For this you will need a driver, as Jack might get mulish. Put on two lines and drive him around until he gets tired, teaching him "get up" and "whoa." It will be well to do this once or twice a day for several days before hitching to a plow.

You can now take him to the field, around which at least one furrow has been plowed. Work a gentle but brisk horse or mule on the lead. Hitch the animal in ready to start before beginning to hitch the green mule. Use a strong bearing stick, with strong strings; this is apt to give you the most trouble—the strings breaking when the mule lunges, unless they are very strong. Have everything prepared beforehand. Tie a 4-foot rope to outer ring of bit, pass through inner ring and tie to inner chain of lead horse several links from hames. This serves the double purpose of holding him back, and securing him should the bearing stick come loose. Last of all hook the traces, inner one first, being sure everything is ready to start before hooking them. Step lively when hitching up a green mule, as he is likely to become impatient and get tangled in his harness.

Let one man hold him by the bridle, keeping him always in his place, and teach him where to walk—if a right-hand plow in the furrow; if a left-hand near the furrow. The other man gets behind the plow and takes the long rope in his right hand, the lead horse's line over his head, and guides him. Go this way for about an hour until Jack begins to lag. He is now broken, conquered, and one man can manage him. Work him this way half the morning, then take him out, water and feed him. About the middle of the afternoon hook him up again, the assistant helping start him off. This is all the work Jack should have in one day, but work him some each day. In four or five days he can stand a full day's work. If you have two to break, work them alternately, never putting two green mules together in plow, wagon or harrow, but work them one at a time beside an old soldier, for about a week. Mare mules are as a rule gentler, hardier and come to maturity quicker than horse mules.

Begin the mule's education early. As a colt halter-break him. As a yearling break him to a turning plow or harrow beside an old horse or mule, but at this age give him light work. It would be folly to put him to hard work now as he cannot stand it. At two years break him to wagon, mower, binder or any other machinery. At this age he can stand a good deal of work. Your assistant should be a man who is not afraid to swing on to the mule and scuffle with him. My success lies, first, in having the green mule gentle, so that he has confidence in me; second, in keeping him always under my control; third, in teaching him exactly what to do. Whatever you teach him in breaking is apt to stay with him, so do not let him learn any mean tricks.

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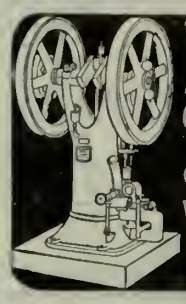

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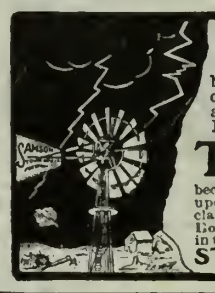

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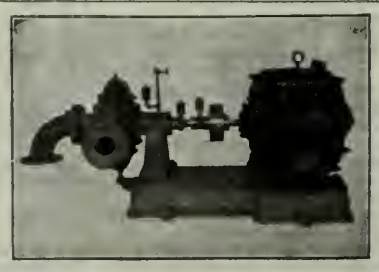

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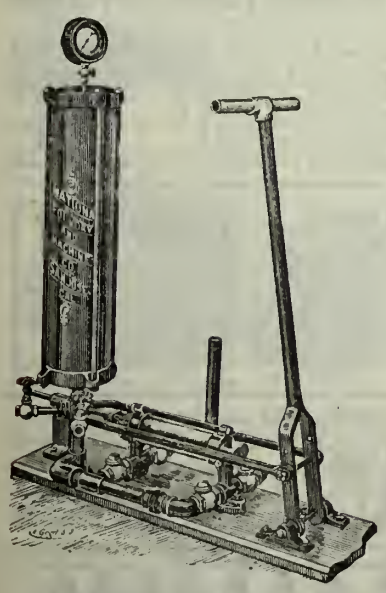

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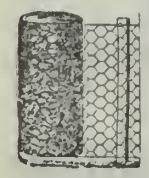

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Patrons of Husbandry.

Wedding Bells at Elk Grove Grange.

To THE EDITOR:—It was the writer's pleasure to attend a wedding reception at Elk Grove Grange to Brother and Sister Bader. Sister Bader is well known to all Patrons of Husbandry as Mattie Mahon, late Secretary of the State Grange of California. The Grange was called to order by Worthy Master Dart and opened in due form. A class being in readiness, Past Master Waite of Enterprise Grange was called to the chair and conferred the third and fourth degrees. After this all repaired to the banquet hall, the newly married brother and sister leading the grand march to the wedding dinner. The wedding cake was cut by the bride and the compliments usual on such occasions were exchanged. The feast being ended, all returned to the Grange Hall, where the Master called the Grange to order and summoned the bride and groom to the altar, the bride being escorted by Sister Annie McConnell, the groom by Brother Shirmer. The Master presented each, on behalf of the Grange, with a handsome present. Sister Annie McConnell made the presentation speech in an able and accomplished manner, and Brother McConnell paid a high tribute to the bride and groom and gave them good advice, which was approved by all present. Grangers are wide awake on all matters pertaining to the interest and welfare of their surroundings and the good of mankind, for they are diligent in all things. THOS. WAITE.

Perkins.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR WEEK ENDING MARCH 12, 1901.

669,497.—STOOL — Augusta Adler, Tacoma, Wash.
669,911.—AMALGAMATOR—G. S. Bartholomew, Los Angeles, Cal.
669,914.—MOP WRINGER — C. S. Darby, Salem, Or.
669,937.—FELLY ADJUSTER—W. W. Endicott, Myrtlepoint, Or.
669,996.—SAW—C. C. Henry, S. F.
669,69 —HAME HOOK — D. Jackson, Pleasant Grove, Cal.
669,796.—STOVE—S. W. Jackson, Selma, Cal.
669,835.—BOOT CALK—J. R. Johnston, Eureka, Cal.
669,751.—TRANSPORTING FISH — H. B. Joyce, Seattle, Wash.
669,645.—VELOCIPEDE—F. A. Kelley, Susanville, Cal.
669,944.—TELEPHONE—Merritt & Hays, S. F.
669,589.—PUMP—C. L. Parker, Los Angeles, Cal.
669,590.—PUMP—C. L. Parker, Los Angeles, Cal.
669,852.—CURRENT WHEEL — E. Peterson, Spokane, Wash.
669,553.—LOOMS—D. M. Seaton, S. F.
669,736.—BIN CABINET — Q. R. Smith, Santa Ana, Cal.
669,601.—THRUST BEARING — F. P. Smith, Los Angeles, Cal.
669,811.—CALENDAR—A. A. Sparks, S. F.
669,558.—STEAM GENERATOR — E. E. Stoddard, S. F.

Does Not Wish to Lose an Issue.

To THE EDITOR:—For some unaccountable reason your issue of Feb. 23 failed to reach me. Will you kindly mail me that number, as we all feel that we can't keep house without the PACIFIC RURAL PRESS, and desire to keep our file complete.—READER, Lassen county.

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ENTOMOLOGICAL.

Danger in Arsenical Sprays With Soap.

To THE EDITOR:—The practicability of mixing arsenical poisons with kerosene emulsion, in spraying trees to kill insects, was touched upon in a recent issue of your valuable paper. Great caution should be used in experimenting in that line. The fact that the emulsion is a mixture of soap and kerosene suggests danger in adding an arsenical poison to it. The writer has seen the leaves and fruit and green bark of prune trees burned, as if by fire, by spraying with Paris green and water, with a very small addition of soap. There was no intention to have soap in the application, but it got in from using a pump and tank in which soap had been used and not thoroughly washed out. The soap seemed to carry the poison into a too intimate contact with the vegetable tissues. Possibly an emulsion may be free from this objection. C. H. DWINELLE.

Fulton, Cal., March 26, 1901.

"The Outcasts: A Tale of the Northwest."

Mr. W. A. Fraser, author of "Mooswa" and others, has just written for early publication in the Saturday Evening Post a short, stirring serial, entitled "The Outcasts." The outcasts are an old buffalo and a wolf-dog, and the greater part of the story is about the strange comradeship and striking adventures of these companions, and their pilgrimage, in company, to the distant plains of deep grass, of which the wolf-dog knew. There are action and strength of word and phrase in the story, and the touch of the soil and the music and charm and somberness of the forest. The rush of the frenzied buffalo herd to death is told with splendid dramatic power. The plan of the book is a unique conception, and it is worked out on novel and entertaining lines.

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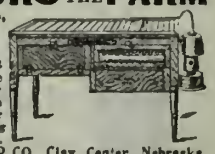

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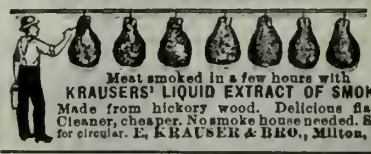

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Oil as a fuel has come to stay. As yet, in California, oil is in its infancy; but its importance as a necessity in trade and manufacture is causing a rapid growth in the industry.

The railroads and many factories of the Pacific Coast and elsewhere are using oil for fuel; and others will, for economic reasons, adopt it as soon as assured that they can depend upon the supply.

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Element of chance eliminated. Kern the banner oil county of California. Petroleum Development Company's wells within half a mile of us produce 2,000 barrels per day. Personality of the Directorate and Officials is a guarantee of fair and honest dealing. Electric Stock will advance to $1.00 as soon as oil is being pumped. No safer oil investment before the public. Increased valuation of our property since we took possession over $50,000.

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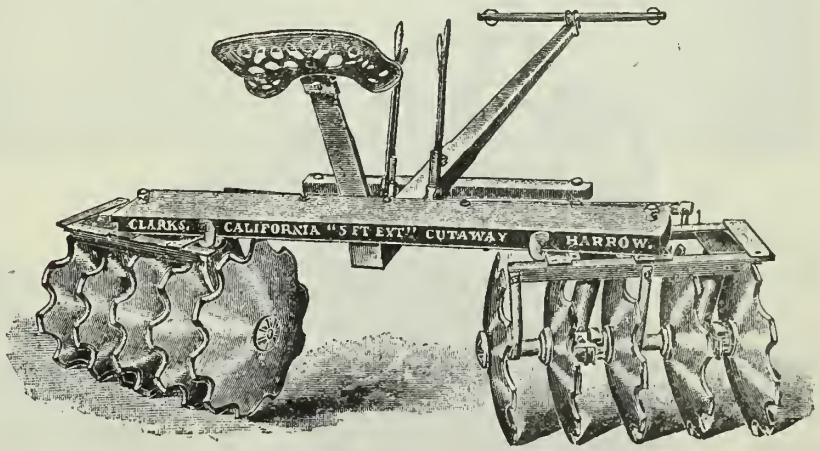

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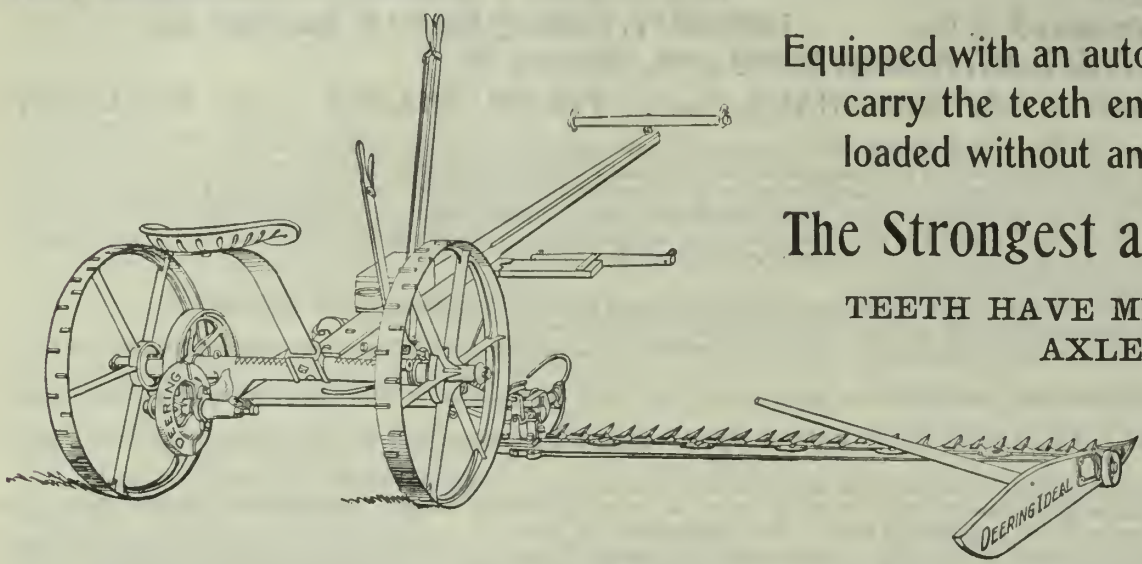

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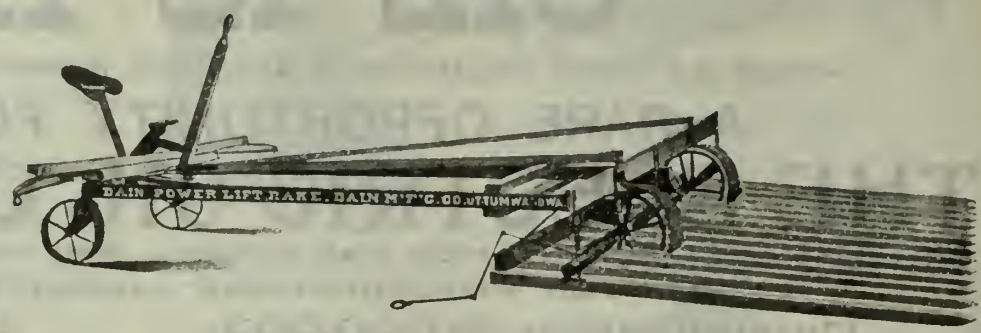

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The Strongest and Best Rake Ever Made.

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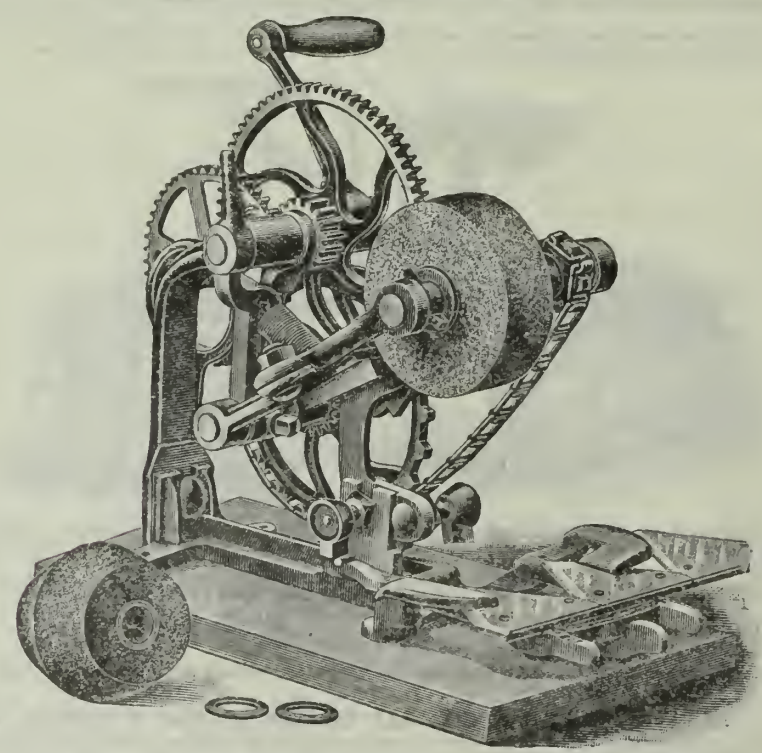

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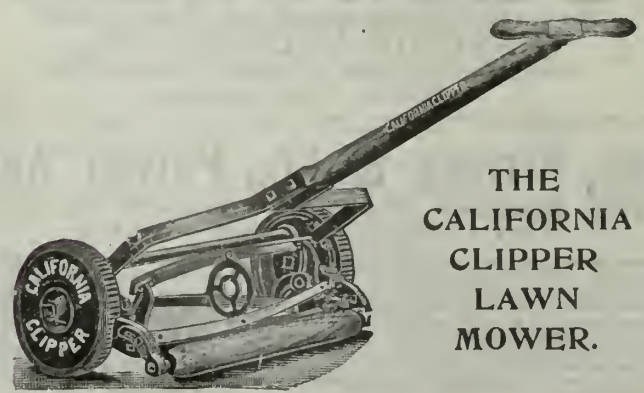

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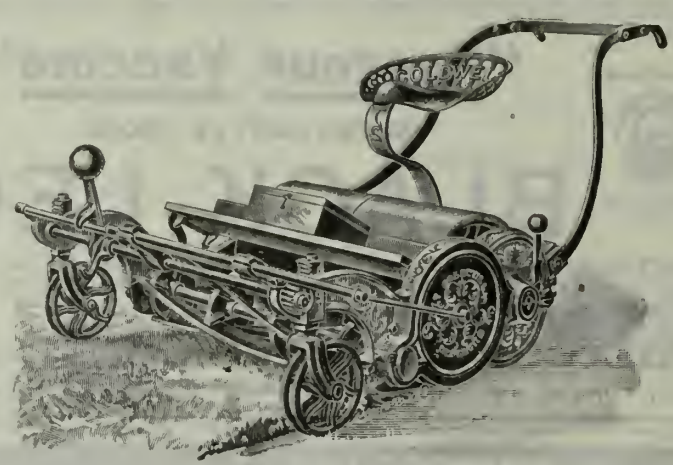

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THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

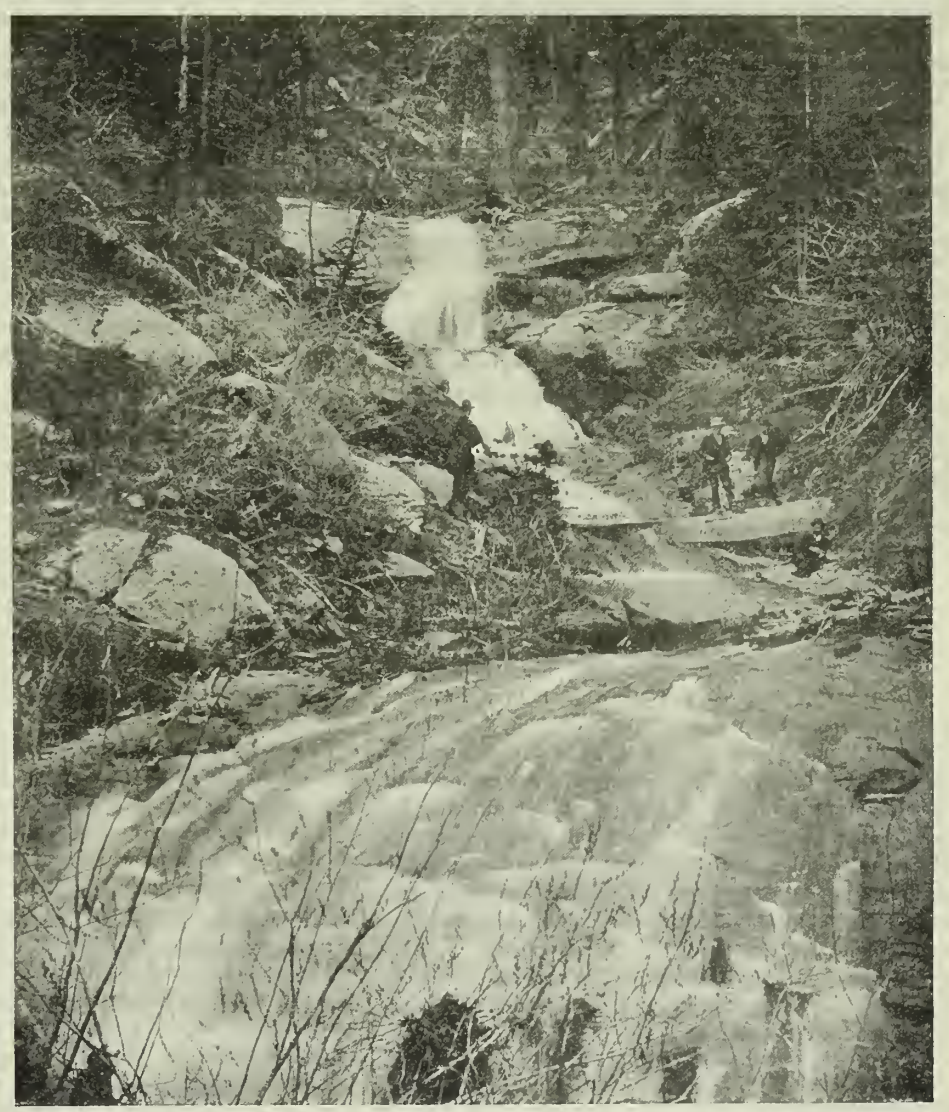
Vol. LXI. No. 14. SAN FRANCISCO, SATURDAY, APRIL 6, 1901. THIRTIETH YEAR. Office, 330 Market St.

From the Sierra to the Sea.

Our illustrations have had a strong industrial trend of late and we make a break this week for the esthetic side, showing two striking scenes, one in the heart of the Sierra Nevada mountains and the other on the sea coast at Monterey. Both are delightful to look upon and rich in their suggestiveness. The display of glorious California golden poppies should induce readers to turn back to page 181 of the PACIFIC RURAL PRESS of March 23d ult. and re-peruse the appreciative sketch of the flower there given. We have noticed of late that our garden makers are allotting protected corners to the taming of this glorious wild flower, and the blaze of color thus secured is of wonderful advantage, while the more sleepy plants are slow in their spring awakening. The poppy will hold the ground thus given to it if a little pulling of rank weeds is undertaken, and it will bloom almost continually if its water supply be maintained. The flower is so delightful as it grows and so acceptable for house decoration that every Californian should have it near at hand and not be content with occasional gatherings from wild places where frequent plucking is making it less abundant than formerly. Europeans think more of our Eschscholtzia than we do and are giving it generous culture and cherishing its sportive tendency, securing thereby many new varieties. The poppy picture we give herewith is from Sunset and was taken on the Del Monte grounds at Monterey. Those who entertain tourists largely know well what good policy it is to have plenty of poppies for them.

The other scene on this page is a characteristic Sierra nook. It is used to illustrate some appreciative mountain notes by Dr. Jordan, president of Stanford University, and it seems very fitting to accompany these words, which should convey a deep impression because the great trees are still in danger, as Congress refused to act for their preservation. Dr. Jordan writes: "Everywhere and all about you are the finest forests on earth—on any earth—the forests which are the birthright of California, and to destroy which would be agricultural suicide. Enormous pines—sugar pine, yellow pine and high mountain pine—cover the flanks of the Sierras; giant firs, spruces and cedars rival the largest trees on earth, while above all, supremely prominent over all vegetation, towers the giant sequoia, mightiest of trees. Some of these are 8000 years old, and on one of the least of these murdered at Sequoia Mills I counted 1902 rings of annual growth. This tree was a sapling 4 feet through at the time of the fall of Rome, but the great ones were 20 and 30 feet through in that far-off time.

"There will never be such forests on the earth again. Neither the State nor the Government should ever let another acre of land on the Sierras be denuded of its timber, for on the preservation of our forests depends the fertility of our plains. To destroy the noblest groves and the grandest, for the lumber that is in them, is simply brutal. It suggests barbarian demolition of the Coliseum in the Middle Ages for the old iron which held its stones together. But it is easier to build a hundred coliseums than to restore one sugar pine forest. We cannot call ourselves civilized if we stand by consenting to such destruction." Now that the Legislature has provided for a splendid redwood reservation, there should be greater strength in the appeal to the United States to rescue the giant sequoias.



A Cascade in the Sierra Nevada Mountains of California.

A Poppy Border at Monterey: How the Flower Can be Used to Great Advantage.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, April 6, 1901.

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The Week.

The grip of the northwest wind is bringing temperatures which are both uncomfortable and horticulturally undesirable. Some local injury has been done to tree fruits and vine growth by frost and hail and drying winds have rendered tillage difficult, beyond any benefit resulting from scant showers. Growing weather with more warmth and moisture—or at least an escape from cold nights—would be generally appreciated. March was dry and grain crops need moisture everywhere. It has been rather a grouty week and we refrain from further comment upon it; the weather report on the following page does the subject justice.

Wheat went up with a rush, both spot and futures, at the close of last week, but has since then rushed down again, until, as we go to press, values stand for spot about the same as a week ago, but futures have dropped even lower. Freights are now favorable, but foreign markets do not look so well, and the market, especially for futures, seems rather unsettled. Three large cargoes have gone out. Barley has been firmer and receded, but is now about the same as a week ago. Shipments of 13,000 tons of barley have been made. Oats are unchanged—Eastern still arriving and local oats firmly held. Corn stocks and demand both light. There is no change in beans—white and Limas being firmer and colored beans being weak, especially Pink beans, which are freely offering. Millstuffs are tolerably firm, owing to light stocks. Hay is dragging and is weak at old prices. Beef is steady; mutton and lamb lower; hogs are higher and firm at the advance; they are too high for packing in any amount. Butter is weak—not specially lower, but receipts are large; some packing is being done. Cheese is quiet, with prices well held up. Eggs are higher and in active demand for use and storage. An after-Easter drop is, however, expected, as usual. Poultry is easier to-day, though high prices have prevailed; ducks are arriving to meet the scarcity. Citrus fruits are unchanged, with large supplies of common stock. Prunes are in a little better tone and a little more is doing. Other dried fruits unchanged—merely jobbing trade being done. Nuts are about the same. New honey is arriving from Ventura county. Choice potatoes have looked up, but common are dull. A few new potatoes are arriving. Onions are scarce and steady. The supply is mostly Australian, with some small lots of Oregon. Asparagus is arriving freely and selling well. Wool is waking up. New wool is selling—more largely in the country than here. Figures are rather low, but they have been worse. The best northern wools are still out of sight, as it is too early for shearing in those districts.

The success of the preliminary effort to carry oranges beyond the reach of our two overland lines in their Eastern shipments is very gratifying. We gave recently an outline of the recourse to steamship from Port Los Angeles to Seattle and thence to Minneapolis by one of the Northern lines. It worked well. The time of shipment from Seattle to Minneapolis is seventy hours, or an average of 26½ miles an hour. The time from Port Los Angeles was nine days, as against an average of from twelve to fourteen days from Los Angeles to the same market by the California overland railways. The highest temperature in cars was 48° above and the lowest 44° above. The oranges arrived in good condition. The Great Northern Railway claims to be able to make fast time with trainload shipments of from fifteen to twenty cars per train. At the Los Angeles office of the Southern California Fruit Exchange the statement is given out that, as the initial shipment had been such a remarkable success, others would follow in quick succession as rapidly as they can be prepared. Twelve carloads of lemons are now on their way from San Diego by sea to the Northern Railway terminal. The Northern route is said to have advantages of temperature at this season in the year, for it is not cold enough to make any great danger from frost, and considerable money will be saved in the matter of icing the fruit cars.

Speaking of transportation, we are reminded of the fact that the memorial of the fruit growers of California to the transportation companies, as prepared by the special committee of the last Fruit Growers' Convention, has just been published in neat pamphlet form, and copies can be had by application to R. D. Stephens, chairman of the committee, at Sacramento. It is an exceedingly strong memorial, and seems, on the face of it at least, to be the best piece of aggressive work which the growers and shippers have done in their own behalf. The essence of the memorial, as was shown by the debates at the December convention, is insistence on a regular schedule for fruit trains and a more rapid transit, as well as a regular one. This is a point which the transportation companies cannot afford to dodge. It is more than reasonable; it is imperative; it is vital to the business. If the showing of these facts as now made by the committee is not effective, we are at a loss to see what will be effective, except the withdrawal of patronage, which seems to be the only alternative and one which no one desires.

The energetic committeemen to whom the agitation for regular, expedited service is entrusted are not content with the issuance of the strong memorial to which we refer. Mr. Stephens is pushing the matter personally among the railway managers. He says the growers are contending for a six-day service to Chicago on green fruit shipments, as set forth in their memorial. Several lines have given the matter their serious attention and Mr. Stephens expects to hear their decision very soon. He says the Union Pacific has agreed to participate in a six-day schedule to Chicago, and he is now waiting to hear from the Southern Pacific Company.

In connection with long-distance marketing, it is an interesting fact that Prof. F. E. Emery of the North Carolina Experiment Station is in California this week en route for the Orient. Secretary Wilson is not satisfied with the result of the prospecting formerly done for openings for American dairy products in Asia and the islands of the Pacific and has planned a new effort for pushing the inquiry. Under special instructions, therefore, from Major H. E. Alvord, chief of the Dairy Division, Prof. Emery will sail early next week for Japan and China, Manila and Hawaii to make personal investigations and to place on sale at many promising points dairy goods to be shipped to him from this port by most direct routes. Effort will be made at each distant center to find commercial connections which will take up the effort and sell the experimental shipments made. Prof. Emery will see how these sales are made and how they result and how the products stand as compared with the export dairy goods from other countries. He will be absent several months. California producers and shippers will be directly interested in this enterprise. It will have much to do with determining the scope of dairy expansion on this coast. Unless we can find outlets we cannot proceed to develop dairying here as the exceptionally fine local conditions invite.

The raisin growers have voted to place Mr. Kearney in control of their organization, but they voted against accepting some of his terms. Whether or not it is a case of going to swim and keeping away from the water, remains to be seen. The election process was very long and exciting, but ultimate peace was certified by the unanimous adoption of a resolution introduced by A. R. Briggs, that, whichever element in the controversy were successful in the election, the vanquished accept the result and cheerfully abide by it. This was a most sensible and promising proceeding. The result of several hours' of ballot counting was the election of Mr. Kearney's ticket, with the single exception of Robert Boot of the old Board, who was retained. The directors chosen were: M. T. Kearney, Hector Burness, S. E. Biddle of Hanford, Percy G. Goode and Robert Boot. The two principal amendments—one to raise Mr. Kearney's salary to $1000 per month, and the other allowing the Board a fund of $500,000—were defeated. The report of the secretary of the Association of the last year's work gives very significant figures: Total packed goods, 38,860½ tons; 1624 tons stem waste; unpacked on hand, 1483½; total delivered, 35,968. Total sales, $2,605,700.11; 1899 account, $9984.14; capital stock, $1393; packing charges paid, $252,231.82; commissions, $168,006.19; cash paid to growers to date, $2,067,322.13, besides certificates amounting to $567,474.57, making total advances $2,635,796.70. The inspector reported that the Association controlled thirty-five packing houses last season and employed forty-five inspectors. The crop was unusually large—3600 carloads of ten tons each.

Prune affairs are still somewhat in suspense. President Bond has given the Santa Clara growers a confidential talk, but chiefly, we believe, on general points and the difficulty of selling abroad this year. There is much agitation at San Jose for a cut in prices to local buyers as well as for export, but the directors seem disposed to wait to see how their grand advertising in Eastern journals will operate. It is reported that on one day last week 600 letters were received at the Association office in San Jose as a testimony that the matter has reached the people. It is also reported that orders have commenced to increase in number. A local journal says the directors are feeling quite jubilant over the initial results of the campaign of education they have inaugurated. Waiting for results is perhaps all that can be done at present, but there are many who are becoming restless over the advancing season and the large amounts of prunes still on hand.

The way a special line of investigation or enterprise lays hold of a man until it fills his thought and purpose is illustrated by our friend George C. Roeding's experience with the Smyrna fig problem. For a decade he has struggled with the important matter in various ways, and has worked with the most expert entomologists in developing the different phases of it. He has also sent agents on his own account to Smyrna to secure needed materials, but now he is up against the real thing himself. We are not surprised, therefore, to hear indirectly that Mr. Roeding will start for Europe next week, and if he stops before he gets to Smyrna, it will only be because he gets involved in some issue with the Turk or some other large obstacle. We are glad Mr. Roeding is going. He can make expert horticultural observations from a California point of view and can place us several points in advance of even the very creditable understanding of the matter which we now have.

Some trouble and much suspicion have arisen through the impression that false tests prevail among those buying or selling milk according to determination of its contents. It will now be a misdemeanor to use any fraudulent apparatus or device for testing the richness of milk or cream, and all should take particular care that their processes and appliances are accurate.

QUERIES AND REPLIES.

California Brand Laws.

To THE EDITOR:—Is there a State brand law in California? In other words, can a stockman record an iron with the Secretary of State at Sacramento and use it for the entire State? It is done in Arizona, New Mexico, Colorado, Montana, etc. Can you help us out as you do the horticulturists?—AN OLD SUBSCRIBER, Merced.

We are certainly disposed to help all readers, whether they catch on to life with a riata or a pruning hook, but we haven't the highest respect for newspaper law as a guide to action. We have the profoundest respect for the law, and we mourn less over our ignorance of it when we reflect that only half of those who make a business of knowing it can succeed. It is a fact of common observation that half the lawyers in every trial get beaten. However, to show our disposition toward our stock growing readers, we remark that the Political Code of California (Sections 3167–3185) provides that owners of horses, mules, cattle, sheep, goats or hogs running at large must have a brand, mark or counter brand different from any one in use by any other person so far as may be known. This brand must be recorded with the county recorder and the actual form or imprint of the brand must be kept in the recorder's office. The law provides for the proper action in the premises on the part of the recorder, and that he must transmit to recorders of adjoining counties a transcript of all such marks, brands, etc., which such recorders must also file in their offices. The law also prescribes at what age and in what manner animals shall be marked or branded, and what shall be observed in selling or slaughtering branded animals. So far as we know, this matter is covered by county registration and not by State registration in California. The Penal Code of California (Section 357) makes the altering of brands on all animals named above a felony, punishable with a term in the State's prison. The Legislature which has just adjourned added a new section to the Penal Code, viz., Section 357½, as follows:

Every person who marks or brands, alters or defaces the mark or brand of any sheep, goat, hog, shoat, or pig belonging to another, with intent thereby to steal the same, or to prevent identification thereof by the true owner, is guilty of a misdemeanor.

This amends Section 357 so as to strike out from its operation the animals named above, thus reducing, as to them, the offense from felony to misdemeanor, leaving the section unchanged as to horses, mules, cows, etc.

Curing Walnuts.

To THE EDITOR:—Will you please publish in the next issue how to cure walnuts? And what solution you dip them in? We had some last year and they became so rank that we could not use them.—SUBSCRIBER, Morgan Hill.

We suppose you refer to English waluts. Change in the flavor is due to change in the oil content and it is promoted by keeping in too warm a place, but it seldom occurs so soon to such a pronounced extent as the question would indicate. We do not know of any curing except a certain amount of drying before putting away in sacks. The dipping of English walnuts is fully described in the PACIFIC RURAL PRESS of January 6, 1900. It is for the purpose of cleansing and improving the color of the shell. It has no curing purpose. If you are growing black walnuts, a certain amount of rankness will develop. It is natural to the nut and cannot be obviated.

Hogs and Squirrels in the Orchard.

To THE EDITOR:—Please state what injury or benefit, if any, a reasonable number of hogs would do in an orchard of old trees of a great variety of fruit, where it is sandy or gravelly soil. Will they kill out morning glory, and will squirrels move when hogs agitate the surface of the soil continually?

I have just put out forty gallons of small oranges with strychnine in them and hope to lessen the number of squirrels materially. Let everyone try a few oranges this way and in ten days or two weeks they will do their work.—J. C. THOMPSON, Perkins.

There are certain times when hogs may do good in an orchard in the way of eating insect-infested fruits which drop, or in rooting out pupæ of insects which hibernate in the soil. There is always a certain manurial value in their presence. There is some danger of injury to the trees, especially if the hogs are not well fed. They will sometimes strip the bark from some trees as high as they can reach. They will not kill out morning glory. They will perhaps reduce the squirrel census somewhat, but we have seen both hogs and squirrels together in orchards, and it has always seemed to us that neither of them belonged there. Good plowing once or twice a year and constant summer cultivation, with perhaps a few young hogs in a large orchard to eat the falling fruit, is a good proposition. It will not do to trust to the hog as a cultivator.

Too Much Nitrate in Spots.

To THE EDITOR:—I believe my experience with Chili saltpetre or nitrate of soda will be of interest to your readers. I set out 150 dormant-bud plum trees this spring, and about two weeks after planting gave each one a top dressing of about one pound of nitrate of soda, with the result that I have killed every one. A few of the buds that were in another field, and had no nitrate, are growing finely. I also set out 100 myrobolan seedlings and gave them a top dressing of nitrate of soda, and do not believe one of them will grow. What was the trouble? Did I give them too much? I forgot to say that I applied about the same quantity to a few seedling peach trees a year old; one has died and the others look sickly.—E. B. BEECHER, Auburn.

As you grow over 100 trees to the acre, the amount of nitrate of soda you used was as much as would be desirable for bearing trees by scattering over the whole surface of the ground. It was probably five times as much as should be used by application to a small space directly around a young tree. Nitrate of soda is very energetic and is immediately available by solution and must be used with caution. You can easily kill plants with excess of concentrated fertilizers. Sheep manure can easily be used in a way to kill plants. Nitrate of soda is an exceedingly desirable source of nitrogen, but people often use it with the belief that if a little is good more must be better. Two or three ounces evenly scattered around the tree, or a pound to the tree evenly scattered over the whole surface of the ground, is about as much as should be used at one time.

Light-Traps and the Codlin Moth.

To THE EDITOR:—Does the codlin moth fly in the night and if so would it be attracted by a light. There are parties trying to sell moth catchers guaranteed to catch the codlin moth. It is a torch in the center of four reflectors, placed over a pan containing water and a thin covering of coal oil. It is supposed to be lighted in the evening and during the night to gather in every codlin moth within an acre of it. This seems too good to be true. We have so much trouble in getting pure Paris green and the wind blows so often just when you ought to spray that the people are ready to accept almost anything that comes along. I am under the impression that I have read in the PACIFIC RURAL PRESS that the codlin moth is not attracted by a light.—H. W. WRIGHTSON, Orleander.

It is the result of experience and of many experiments that the codlin moth does not fly to a light. More than twenty years ago many California fruit growers determined that to their own satisfaction. The trap of which you speak is a good one to catch moths, and you will get many of them of many kinds, but you will not get codlin moths. People who claim that a light trap will catch this pest do not know a codlin moth when they see it. Every one who thinks this most desirable method will do ought to try it and have their catch examined by some one who can distinguish between moths of different kinds.

A Pestilent Immigrant.

To THE EDITOR:—I send you a pestilent, persistent weed which I am trying to exterminate. I send the flower and as much of the extremely deep root as could be coaxed out of the ground by hand. What is its name, and is there any remedy except persistently spading the ground very deeply and sifting the soil?—JOHN T. DOYLE, Menlo Park.

Mr. Davy of the department of botany at the State University identifies the plant as "hoary cress" (Lepidium draba), a native of Europe and Asia. It has been reported as occurring on ballast at Atlantic seaports, in Colorado and at two or three points in California. The first arraignment of it as a bad weed lies in Mr. Doyle's charges against it. Possibly it finds Menlo Park conditions too much to its liking. As the records of the plant do not relate to its badness as a weed, methods of eradication are not mentioned. Stamping out by pulling when the ground is moist and by spading are the only methods we can now suggest, unless it is in cultivated ground, where it can be continually cut with a weed knife, as is done with morning glory. No known plant can survive smothering by subterranean decapitation, if thoroughly done and regularly repeated for a sufficient length of time.

Early Planting and Pea Weevils.

To THE EDITOR:—I have raised from six to fifteen kinds of peas annually for the last twenty years. I have planted peas in January, February and March and have had very few weevils in them. In planting later than this I have had plenty of weevils in the peas. I think you know why—the warm weather brings the insect.—FRED. SCHARR, Red Bluff.

This is very true. The pea will grow at a temperature too low for the occurrence of the insect, and the winter-sown peas get too large for its attack. Later peas come just right for the insect, and they get loaded with eggs while the pods are small and full of weevils afterwards.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 1, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Nearly normal temperature has prevailed during the week, but the nights have been cool, and severe frosts have occurred in some sections. It is reported that on the lowlands in Yolo county apricots have been entirely killed and other fruits seriously injured. Some damage has also been done in Butte and other counties. Cut worms are injuring fruit in Solano county. Light rain has fallen in some localities. The soil is becoming quite dry and heavy rain would be beneficial. Grain continnes in good condition and wheat is heading out in some places. Green feed is plentiful. Work in hop fields is progressing.

COAST AND BAY SECTIONS.

Conditions have been unfavorable for most crops during the week. Drying winds in some sections have absorbed the moisture in the soil, and grain is beginning to turn at the base. A severe hail storm on Wednesday damaged fruit to some extent and frosts have slightly injured grapes, peas and tomatoes. It is also probable that early deciduous fruits were somewhat damaged. The dry spell is most noticeable in southern coast counties, where rain is badly needed. The light, scattered showers during the week were not very beneficial, but improved the condition of grain and feed in some places.

SAN JOAQUIN VALLEY.

The past week has been unfavorable for all crops. The weather has been partly cloudy and cold, with frequent frosts and high north winds. A few scattered, light showers, in some places accompanied by light hail, occurred in the northern portion of the valley, and a snow flurry is reported from the vicinity of French Camp on Wednesday afternoon. Frosts damaged vineyards and fruit in some sections, but as yet it is impossible to say to what extent. It is generally believed that the damage is not serious. Grain shows the effect of the dry north wind in some localities, but no damage is reported. Prospects are good for a large grain crop. Almonds are dropping badly in the vicinity of Lodi. It is thought the rain which fell while they were in bloom destroyed the pollen and prevented the blossoms from fertilizing. Other fruits promise large crops. Irrigation and cultivation are progressing. Pasturage is generally good. Rain would be beneficial in all localities.

SOUTHERN CALIFORNIA.

Drying winds during the week have somewhat injured late grain and pasturage and frosts have materially damaged apricots in some localities. Light rain has fallen in some sections, but it was barely sufficient to moisten the soil, except in the extreme southern portion, where the rainfall amounted to 0.25 inch. Early sown grain is in good condition, but the later sown is less thrifty, and the crop will be light if rain does not come within a few days. Hay and pasture are also showing lack of moisture. Citrus fruit trees are heavily laden with blossoms and have not been injured by frost. Walnut trees show good growth and appear thrifty.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 3, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	1.57	42 67	44 55	37 30	38	52
Red Bluff	.04	22 21	19 99	22 95	40	72
Sa ramento	.32	17 50	15 88	17.24	38	70
San Francisco	.10	18 94	17.36	20 02	42	62
Fresno	.06	10 34	7.17	7.86	36	100
Independence	.00	5 80	2.81	4 44	30	66
San Luis Obispo	.18	27 80	15 04	15 93	32	72
Los Angeles	.01	14 11	5 56	15 57	40	68
San Diego	.46	10 54	3.13	8 69	46	64
Yuma	.00	3.60	.77	2.97	42	82

HORTICULTURE.

Facts and Fancies on Pear Blight.

N. W. Motheral, Horticultural Commissoner for Kings county, is organizing a compaign against pear blight and published in the Hanford Sentinel an interesting collection of facts and fancies which may be entertaining and helpful to readers in regions where the disease has cropped out. It has spread a good deal in the last few years, and in some places is doing great damage. The disease in Kings county has been identified by Newton B. Pierce, the local expert of the United States Department of Agriculture, to be simon-pure bacterial pear blight like that at the East. Mr. Motheral gathers the following statements from observation and other sources:

SUSCEPTIBILITY.—The severity of the attacks, that is, the distance which the blight extends down the branches, depends on a number of different conditions, some of which are under the control of the grower. It is well known, however, that the pear and quince are usually attacked oftener than the apple. Some varieties of pears, like Duchess and Keiffer, resist the disease much better than others, such as Bartlett and Clapp's Favorite. It may be stated in a general way that the trees most severely injured by blight are those which are healthy, vigorous, well cultivated, and well fed; or, in other words, those that are making rapid growth of new, soft tissues. Climatic conditions greatly influence the disease, warm and moist weather, with frequent showers, favoring it; dry, cool and sunny weather hindering it, and very dry weather soon checking it entirely.

THE CAUSE.—The pear blight microbe is a very delicate organism and can not withstand drying for any length of time.

In the blighted twigs exposed to ordinary weather it dries out in a week or two and dies. It causes the greater part of the damage in the month or two following blossom time, but twig blight may be prevalent any time through the summer when new growth is coming out. In the nursey severe attacks often occur through the summer.

In the majority of cases, however, the disease stops by the close of growing season. At that time the line of separation between the live and dead wood is quite marked, and probably not one case in several hundred would be found where the diseased wood blends off into the healthy parts and the blight is still in active progress.

In the old, dried bark, where the disease has stopped, the microbes have all died and disappeared.

WINTERING.—It has been claimed that the blight microbes live over winter in the soil, and for a long time the writer supposed this to be the case, but after careful investigation the idea was abandoned, for in no instance could it be found there. Unless the microbes keep on multiplying and extending in the tree, they soon die out. This is a very important point, for it affords opportunity to strike the enemy at a disadvantage. In certain cases the blight keeps up a sort of slow battle with the tree through the summer, so that at the close of the season, when the tree goes into a dormant condition, active blight is still at work in it. This is also true of late summer and autumn infections. In these cases the blight usually continues through the winter. The germs keep alive along the advancing margin of the blighted area, and although their development is very slow, it is continuous. Probably the individual microbes live longer in winter. At any rate, the infected bark retains its moisture longer and generally the dead bark contains living microbes during a much longer period than it does in summer. It has already been found that this microbe stands the cold well. They may be frozen or placed in a temperature of 0° Fahrenheit and not suffer.

HOW IT GROWS.—When root pressure begins in spring the trees are gorged with sap. Under these favorable conditions the mircrobes which have lived over winter start anew and extend into a new bark. The new blight which has developed in winter and spring is easily recognized by the moist and fresh appearance of the blighted bark, as contrasted with the old, dead and dry bark of the previous summer.

The warm and moist weather which usually brings out the blossoms is particularly favorable to the development of the disease. At the time it spreads rapidly, and the gum is exuded copiously from various points in the bark and runs down the tree in a long line. Bees, wasps and flies are attracted to this gum, and undoubtedly carry the microbes to the blossoms. From these first flowers it is carried to others, and so on till the blossoms are all killed or until the close of the blossoming period. Even after the blossoming peroid it is almost certain that insects accidentally carry the blight to the young tips and so are instrumental in causing twig blight also. The key to the whole situation is found in those cases of active blight (comparatively few) which hold over winter. If they can be found and destroyed, the pear blight question will be solved, for the reason that without the microbes there can be no blight, no matter how favorable the conditions may be for it; to use the common expression, there will be none left for seed.

TREATMENT.—The treatment for pear blight may be classed under two general heads: (1) Methods which aim to put the tree in a condition to resist blight or to render it less liable to the disease; and (2) methods for exterminating the microbe itself, which is of first importance, for, if carried out fully, there can be no blight. The methods under the first head must, unfortunately, be directed more or less to checking the growth of the tree, and, therefore, are undesirable, except in cases where it is thought that the blight will eventually get beyond control in the orchard. Under the head of cultural methods which favor or hinder pear blight, as the case may be, the following are the most important:

PRUNING.—Pruning in winter time, or when the tree is dormant, tends to make it grow and form a great deal of new wood, and on that account it favors pear blight. Withholding the pruning knife, therefore, may not otherwise be best for the tree, but it will reduce to some extent its tendency to blight.

FERTILIZING.—The better a tree is fed the worse it will fare when attacked by blight. Trees highly manured with barnyard manures and other nitrogenous fertilizers are especially liable to the disease.

Overstimulation with fertilizers is to be avoided, especially if the soil is already well supplied.

CULTIVATION.—The same remarks apply here as in the case of fertilizing. A well-cultivated tree is more inclined to blight than one growing on sod or untilled land, although the latter often do blight badly. Generally, good tillage every year is necessary for the full development of the pear and quince trees, and is more or less so for the apple in many parts of the country; but the thrift that makes a tree bear good fruit also makes it susceptible to blight. Check the tree by withholding tillage, so that it makes a short growth and bears small fruit, and it will be in a better condition to withstand blight than it would were it cultivated. In cases where thrifty orchards are attacked by blight and threatened with destruction, it may often be desirable to plow them once in the spring and harrow soon after the plowing, to plow them only, or to entirely withhold cultivation for a year, moving the weeds and grass or pasturing with sheep. A good way is to plow the middle of the space between the rows, leaving half the ground untouched.

IRRIGATION.—In irrigated orchards the grower has the advantage of having control of the water supply. When such orchards are attacked, the proper thing to do is to withhold the water supply or reduce it to the minimum. Only enough should be applied to keep the leaves green and the wood from shriveling.

EXTERMINATION.—We now come to the only really satisfactory method of controling pear blight—that is, exterminating the microbe which causes it, by cutting out and burning every particle of blight when the trees are dormant. Not a single case of active blight should be allowed to survive the winter in the orchard or within a half mile or so from it.

Every tree of the pome family, including the apple, pear, quince, Siberian crab apple, wild crab apple, the mountain ash, service berry, and all the species of Ceatægus, or hawthorns, should be examined for this purpose, the blight being the same in all. The orchardist should not stop short of absolute destruction of every case, for a few overlooked may go a long way toward undoing all his work.

Cutting out the blight may be done at any time in the winter or spring up to the period when growth begins. The best time, however, is undoubtedly in the fall, when the foliage is still on the trees and the contrast between that on the blighted and that on the healthy limbs is so great that it is an easy matter to find all the blight. It is important to cut out blight whenever it is found, even in the growing season. At that time of year, however, it cannot be hoped to make much headway against the disease, as new cases constantly occur which are not sufficiently developed to be seen when the cutting is done.

In orchards where there are only a few trees, and the owner has sufficient time to go over them daily, he will be able to save some which would otherwise be lost. However, when the trees stop forming new wood, the campaign should begin in earnest.

Of course, the greater part of the blight can be taken out the first time the trees are gone over. If this be in midsummer, the trees should all be again carefully inspected in the autumn, just before the leaves shed, so as to get every case that can be seen at that time. After this a careful watch should be kept on the trees, and at least one more careful inspection given before the blossoms open. It would doubtless be well to look the trees over several times during the winter to be certain that the blight is completely exterminated.

In order to do the inspecting thoroughly it is necessary to go from tree to tree down the row, or in the case of large trees to walk up one side of the row and down the other, as in simply walking through the orchard it is impossible to be certain that every case of blight has been cut out.

The above line of treatment will be even more efficacious in keeping unaffected orchards free from blight. A careful inspection of all pomaceous trees should be made two or three times during the summer and a sharp lookout kept for the first appearance of the blight.

It usually takes two or three years for the disease in an orchard to develop into a serious epidemic, but the early removal of the first cases will prevent this and save a great deal of labor later and many valuable trees.

In doing this work it must be remembered that success can be attained only by the most careful and rigid attention to details.

Watch and study the trees, and there is no question that the time thus spent will be amply repaid.

ENTOMOLOGICAL.

Promotion of Purity in Paris Green.

We alluded briefly last week to a new law for this purpose. In view of the pressing importance of the matter we print in full the Act passed by the Legislature relating to the sale of Paris green used as an insecticide. Packages should be sent to the agricultural department at Berkeley for examination. Growers, when purchasing, should see that a certificate from the director, Prof. E. W. Hilgard, accompanies the material:

An Act to prevent fraud in the sale of Paris green used as an insecticide.

Section 1. It shall be the duty of each and every manufacturer of Paris green (commercial aceto-arsenite of copper), to be used as an insecticide in this State, and of every dealer in original packages of said Paris green manufactured outside of this State, before the said Paris green is offered or exposed for sale, or sold within this State as an insecticide, to submit to the director of the California Agricultural Experiment Station, at Berkeley, samples of said Paris green, and a written or printed statement setting forth: first, the brands of said Paris green to be sold, the number of pounds contained in each package in which it is put on the market for sale, the name or names of the manufacturers and the place of manufacturing the same; second, the statement shall set forth the amount of combined arsenic which the said Paris green contains, and the statement so furnished shall be considered as constituting a guarantee to the purchaser that every package of such Paris green contains not less than the amount of combined arsenic set forthin the statement.

Sec. 2. Every purchaser of said Paris green in original packages, which is manufactured outside of this State, who intends to sell or expose the same for sale, and every manufacturer of Paris green within this State, shall, after filing the statement above provided for with the director of the California Experiment Station, at Berkeley, receive from the said director a certificate stating that he has complied with the foregoing statement, which certificate shall be furnished without charge therefor; said certificate, when furnished, shall authorize the party when receiving the same to deal in this State in the said Paris green. Any person who fails to comply with the terms of Section 1 of this Act shall not be entitled to such certificate, and shall not be entitled to deal in said Paris green within this State. Nothing in this section shall be construed as applying to retail dealers selling Paris green which has already been labeled and guaranteed.

Sec. 3. Paris green, when sold, offered or exposed for sale, as an insecticide, in this State, shall contain at least 50% of arsenious oxide, and shall contain not more than 4% of the same in the uncombined state.

Sec. 4. The director of the California State Agricultural Station, at Berkeley, shall examine or cause to be examined different brands of Paris green sold, offered or exposed for sale within the State, and cause samples of the same to be analyzed, and shall report results of analyses forthwith to the secretary of the State Board of Horticulture and to the party or parties submitting said samples, and such report shall be final as regards its quality.

Sec. 5. Any person or persons, firm, association, company or corporation violating any of the provisions of this Act, and any person who shall sell any package of Paris green or any part thereof which has not been labeled as herein provided, shall be guilty of a misdemeanor, and shall be fined not less than $50 nor more than $200, together with the costs of the suit in an action to be brought by the State Board of Horticulture through its secretary in the name of the people of the State of California.

Sec. 6. The Attorney-General of the State of California is charged with the prosecution of all such suits.

Sec. 7. This Act shall take effect immediately.

He Will Bet on Paris Green for Canker Worms.

TO THE EDITOR:—There seems to be a lot of trouble with the canker worm in our valley. I see by the PACIFIC RURAL PRESS of March 16th where a Solano county fruit grower can't kill them with Paris green. He evidently made some mistake somewhere. I had

lots of them and can kill them very easily with Paris green. I sprayed my trees as soon as the worms made their appearance, and followed it with another spraying in six or seven days, which will just about clean them out.

Now, for the benefit of those who think I do not know what I am talking about, I will bet 100 good American dollars that one pound of reasonably good Paris green to 100 gallons of water will kill any and all worms that eat it, and they don't want much of it, either.

Here is the way it is mixed: Take one pound of Paris green in a little bucket, add enough water to make a thin paste, add three tablespoons of washing ammonia, stir well, dump in your barrel, add 100 gallons of water, and keep it well stirred while spraying—and do not depend too much on hired help.

Suisun. CHAS. VOGEL.

We should be nervous about using so strong a wash on some trees—peach trees, for instance. Is there no injury to foliage in your experience?

THE VINEYARD.

Rupestris St. George and Bench Grafting.

TO THE EDITOR:—The zeal of recent converts is proverbially liable to lead them to excess. For this reason a few words of caution to the latest advocates of the planting of Rupestris St. George and of bench-grafting resistant cuttings may be in place. Though, as far as our experience has gone in California with the Rupestris St. George, it seems the most widely adapted of any resistant yet tried to the conditions of our soil and climate which exist in the viticultural districts of Napa, Sonoma, Santa Clara and other of the coast counties, it is by no means yet proved that it will succeed equally well in other counties where the soil and climate are different. It is well to keep in view that some serious failures of Rupestris St. George have been chronicled in the south of France. These failures have been principally in moist soils similar to those which exist in a large part of the San Joaquin raisin district, where the vineyards are sub-irrigated. The failure in these cases is due to a fungous root rot to which the Rupestris St. George is very susceptible. Any one who has seen the numerous "toadstools" growing out of the stems and branches of Muscat vines in the raisin district will realize how favorable the conditions are there for fungous wood rots, and hesitate before planting a variety liable to their attacks. The deeply penetrating, vertical roots of the Rupestris cannot endure immersion in standing water for any length of time, and wherever the permanent water level is within 6 or 8 feet of the surface, especially in summer, it would seem unwise with our present knowledge to plant any variety of this species.

The other cases of failure of St. George have been in extremely dry soils. These seem to have been cases where the character of the subsoil or underlying rock was of such a nature as to prevent the deep penetration of the roots. Wherever the roots can follow their natural course downwards the St. George seems very resistant to drought.

The question of bench grafting has been pretty thoroughly threshed of late, and there is perhaps little use of saying much more about it until we have had more experience. Here, however, the neophytes are again exceeding in their zeal the first cautious experimenters. Some of the older vine growers, who were at first unalterably opposed to bench grafting, are now advocating what they call a "middle course," which consists in rooting the resistant cuttings in the nursery the first year, grafting them there the second and planting them in the vineyard the third. This differs from the ordinary method of bench grafting in two particulars: It delays the planting of the vineyard one year, and the operation of grafting is more troublesome and expensive, as it has to be done by the workman on his knees in the nursery, instead of conveniently seated at a bench. I have had but little experience with this method; but, as far as it goes, it indicates that the growth of a graft on a rooted cutting is little, if any, more vigorous than that of one on a plain cutting. This method may be of some use in special cases, as in utilizing small resistant wood unfit for cutting grafting and especially for resistant stocks which root with difficulty and of which the percentage obtained by cutting grafting is too small.

Those who are doubtful of the vigor and fertility of a vineyard started by the method of bench grafting are referred to the experience of a grower quoted in the PACIFIC RURAL PRESS of July 28, 1900. This grower claimed to have gathered twice the weight of grapes in eight years from a piece of vineyard started with bench grafts as he obtained from an otherwise similar piece, on which the grafting was done in the vineyard. A similar experience is detailed in the Review of Viticulture, Dec. 1, 1900. In 1888 M. B. Chauzit of Nimes, south of France, started an experiment to test the relative value of bench grafting and vineyard grafting. This experiment has been carried on for twelve years and some of the data obtained are given here.

PLOT 1.—Planted in 1888 with bench grafts. (308 vines.)

PLOT 2.—Planted in 1888 with Riparia (361 vines) and grafted in the vineyard in 1889.

YIELD OF GRAPES IN POUNDS PER ACRE.

	Plot 1. Bench Grafts.	Plot 2. Vineyard Grafts.
1890	2,300	A few bunches
1891	6,300	3,100
1892	9,900	5,300
1893	5,000	2,700
1894	6,500	6,300
1895	8,100	3,700
1896	5,900	4,200
1897	8,400	3,600
1898	1,300	500
1899	8,200	6,900
1900	13,800	10,300
Total for 10 years	73,400	46,600
Yearly average	7,340	4,660

These results are very striking and tend to show not only that bench grafting is a cheaper and safer way of starting a resistant vineyard, but that the final results are better even when the vineyard grafting method is carried out successfully. This excess of over a ton per acre must be credited wholly to the superiority of the union in the case of the bench-grafted vines. When the vineyard grafting is not perfectly successful, as will happen even with the most skillful grafters when the weather and soil are unfavorable, the difference may be even greater and amount to as much as 100%, as in the case previously reported. The claim that bench grafting delays the bearing of the vineyard one or two years is hardly tenable in the face of these figures.

FREDERIC T. BIOLETTI.

University of California, Berkeley.

THE POULTRY YARD.

Goose Growing In California.

This is a subject one does not often hear about, and the account prepared by E. I. Cole for the Western Agriculturist will be read with interest.

EASY TO GROW.—That geese are not oftener raised for profit is a surprise to one who is accustomed to having them. Nothing in the line of poultry requires less care and expense in the rearing, and nothing brings in handsomer returns. On the other hand, nothing is so complete a failure as geese, without a proper knowledge of their peculiar requirements. They need but little shelter, and, except when young or being fattened, no food but grass. They are very hardy, live to an old age, and are a positive benefit to the land after the grain is off. In three different ways they bring in revenue—by the sale of the fowls, their eggs and their feathers. Goslings reach maturity early and take less expensive food than any other kind of poultry. The young goslings rarely die except by accident. They are good layers for eight or ten years—some say for life, especially if the gander is changed every two or three years.

BREEDING.—A gander should never be kept longer than three years, as young ganders insure greater fertility in the eggs. On the contrary, a goose of three years or over will lay more eggs and more fertile ones than will a younger one. In goose raising there is the further advantage that a large number can run together without proportionally decreasing the profits, as with other fowls.

For breeders, select large birds and those having a record as being early and good layers. Of most varieties mate one gander to two or three geese, possibly to four. An Embden gander will care for eight to ten, and an African for fifteen to twenty.

A low shed, open to the south, with straw on the floor, is all the shelter they usually need. They lay early in the morning, and should be penned until 9 A. M. in order that all the eggs may be gathered. Boxes and barrels on their sides make good nests for them, or, lacking these, geese will make their own nests of the litter on the floor. They lay from twenty to thirty eggs the first year, twenty-five to forty the second, and at maturity, which is three years, will often lay fifty eggs per annum.

HATCHING.—The eggs should be set under a hen or in an incubator. If under the former, five are plenty, though some set as many as seven. The period of incubation is from thirty to thirty-four days. On the twenty-sixth day place the eggs for a minute in water of 104° temperature and then replace in the nest. They should be set early in the season, as heat is bad for young goslings. The shells are so tough that one often has to help the little things into the world.

PLUCKING.—They can be plucked four or five times a season, though some pluck them every six weeks, except during the laying season. They yield from one to two pounds of feathers a year, which range in price from 40 to 75 cents per pound. In order to see whether the feathers are "ripe" for pulling pick one out here and there. If they come out without hard pulling, and if no bloody fluid adheres to the quill they are in right condition.

BREEDS.—Of the different varieties, the Toulouse are about as good as any. They are easily confined, as they are too heavy to fly and too large to get through a good fence, are strong and hardy, small feeders and good layers, commencing to lay early. They grow rapidly, are gentle and quiet, weigh well, have good feathers and many of them. The principal objection to them is their color, which is gray.

The Embdens are white, very hardy, weigh as much as the Toulouse, mature a trifle earlier and are better mothers. The Chinese are the best of all layers and have a graceful, swan-like look on account of their long necks, but are too small to be very profitable. The Africans grow the quickest, lay as many eggs as the Toulouse and have nice flavored flesh. They are little known in the West, but are great favorites in the East, many preferring them to any other breed.

Proper Breeding Pens.

TO THE EDITOR:—Let us start a discussion on the "proper" methods of more thoroughly or scientifically handling our fowls. While some are breeding by pens of from one to twenty, or even more, others are breeding or mating by pairs. Some of us must be wrong and working both to the detriment of ourselves and the different breeds of fowls. But can it be possible that twenty females of some of our different breeds can be mated with success with only one male? Let us compute the situation: Some of our different breeds of chickens can be made to lay over 100 eggs, or almost that number, in a season, without stopping. Now, multiply 100 by 20, and what do we have? The enormous sum of 2000 chicks, if the eggs are all fertile and put through the process of incubation. All these the result and product of one male, besides, perhaps, being allowed to roam at will with others—with what we call the general flock—before mating or penning up.

Now, cannot this be carried to the other extreme by pairs, especially where they are penned for mating? I, for one, should like to know where we all get our authority for such judgment, or, I might say, haphazard handling? I notice that the State Fair regulations are that, to compete for a prize pen, we must exhibit a certain number of fowls, which is called a breeding pen, viz: four hens and one cock, which looks to me as something nearer the right way for best results. I should like to hear from others on the subject, as we are starting a yard of White Plymouth Rocks which we want to be second to none. We propose a breeding pen to be one-half dozen hens and one cock, or cockerel. They are from two different strains—one bred first by the pair mating, and then by trios; the others by a small breeding pen of about 4x6. Let us hear from others interested.

SAMUEL M. COPPIN.

Cottonwood Farm, Pleasant Grove, Cal.

Fertile Eggs.

TO THE EDITOR:—I have two new roosters—one a Brown Leghorn and the other a Plymouth Rock—shut up in pens with hens of their own breed. How many days must elapse before the eggs will be fertile? Also, how many hens do you consider it advisable to give each rooster? SUBSCRIBER.

Colusa.

In ten days or two weeks eggs will be fertilized. From eight to twelve hens with one cock, to be sure of best results. Do not put too many hens in one pen; with only a few, more and stronger chicks will be obtained. A. WARREN ROBINSON.

Napa.

IN California the right to the use of running water flowing in a river or stream, or down a canyon or ravine, may be acquired by appropriation. This must be for some useful or beneficial purpose, and when the appropriator or his successor in interest ceases to use it for such a purpose, the right ceases. The person entitled to the use may change the place of diversion, if others are not injured by such change, and may extend the ditch, flume, pipe or aqueduct by which the diversion is made to places beyond the first use. The water appropriated may be turned into the channel of another stream and mingled with its waters, and then reclaimed; but in reclaiming it the water already appropriated by another must not be eliminated. A person desiring to appropriate must post a notice in writing, in a conspicuous place at the point of intended diversion, stating therein: First, that he claims the water there flowing to the extent of (giving the number) inches, measured under a 4-inch pressure; second, the purposes for which he claims it, and the places of intended use; third, the means by which he intends to divert it and the size of the flume, ditch, pipe or aqueduct in which he intends to divert it. A copy of the notice, within ten days after it is posted, must be recorded in the Recorder's office of the county in which it is posted. Within sixty days after the notice is posted the claimant must commence the excavation or construction of the works in which he intends to divert the water, and must prosecute the work diligently and uninterruptedly until completion, unless temporarily interrupted by snow or rain. Completion means conducting the water to the place of intended use. By a compliance with the above the claimant's right to the use of water relates back to the time the notice was posted, but a failure deprives the claimant of the right as against a subsequent claimant who complies.

THE DAIRY.

What Cures the Cheese?

Dr. Babcock of Wisconsin, the inventor of the widely used Babcock Test, at the recent meeting of the Wisconsin Dairymen's Association, described his discovery of a new agency in cheese curing and presented tangible evidence to the assembled throng. Briefly stated by the Breeders' Gazette, this new discovery is this:

In 1897, working in company with Prof. Russell, Dr. Babcock discovered that normal milk contained an inherent ferment which tends slowly to digest it. This ferment is named galactase. The announcement of this, coming from so eminent an authority as Dr. Babcock, caused a sensation in the scientific world and work was immediately commenced in many countries along the lines laid down. Dr. Freudenreich of Berne, Switzerland, has, among the European scientific men, done perhaps the most extended work of research and experiment in connection with this new ferment, and his results bear out in every particular the statements made by Dr. Babcock. The galactase is similar to the pancreatic secretions of the stomach, and the important conclusion reached by Dr. Babcock is that it acts continually on the casein in curd, transforming it by degrees from an indigestible to a digestible substance. Formerly it was held that the work of bacteria caused the ripening of cheese. The new discovery entirely upsets that theory. Further experimentation then developed the fact that the action of the galactase did not cease under temperature as low as the freezing point and even lower, but at the freezing point the action of cheese bacteria ceases and in time the bacteria die. These facts being taken in conjunction, it was determined to test the ripening of cheese in refrigerators, and at the meeting above alluded to Dr. Babcock presented samples of eight-months-old cheese subjected while ripening to temperatures not higher than 40° Fahr. These cheeses were of the finest texture, were free from holes and had no mold on the exterior surfaces. Moreover, the cheese itself was so "broken down" as to be almost in a condition to be spread like butter on ordinary bread. Hundreds of people present at the meeting tested the cheese in all possible ways and under every test results were the most satisfactory. Dr. R. A. Pearson, assistant chief of the Dairy Department of the Department of Agriculture at Washington, Prof. J. A. Ruddick, assistant dairy commissioner of Canada, J. H. Monrad of Illinois and others participated in testing the cheese. Dr. Pearson declared that the discovery presaged the opening up of a new era in cheese making. A large Chicago dealer who was present was so charmed with the salable qualities of the samples of cheese offered that he announced his intention of immediately equipping refrigerators where the entire output of some good cheese factory can be ripened after the new fashion.

There seems to be no flaw in the process as it has been tested. There is little doubt that the new product, on account of its superior healthfulness, more attractive appearance and immeasurably greater digestibility, will soon take a leading position in the world's trade in cheese.

Fishy Butter in Australia.

Consul Goding, of Newcastle, January 29, 1901, reports that a discovery of importance to the dairying interests of the world has been made by the agricultural department of New South Wales. As the result of experiments with regard to "fishy" butter, the dairy expert has succeeded in isolating the micro-organism which causes that disease. For several years, says Mr. Goding, the matter has been the subject of scientific investigation, the peculiar liability of butter to become fishy being one of the greatest difficulties to be contended with in the export trade of this article. Hence the discovery is not only of scientific interest, but of considerable commercial importance. The consul adds that not only is the expert satisfied as to the correctness of his diagnosis, but that he has inoculated sterile cream with the organism and actually succeeded in producing fishy butter.

THE noise and odor of gas and oil engines may be considerably suppressed by placing inside of or on the top of the cast iron chamber in which the products of the explosion are generally received, a few scrubber rings, such as are used in gas works.

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U S U S U S

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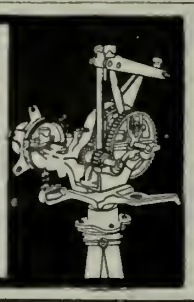
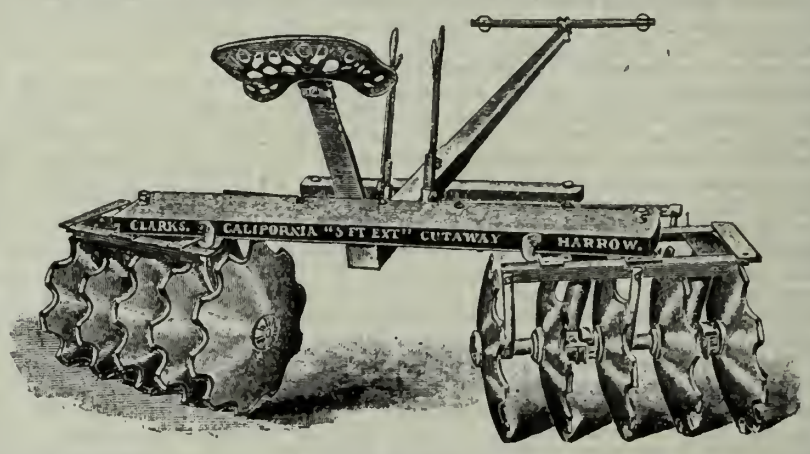


This harrow can be used to throw the earth to or from the tree. It can be drawn together and used in the regular length or extended as shown. The 5 and 6 are best all round two-horse harrow.



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Clark's "B5" Reversible, DOUBLE LEVER, Extension Head Harrow.

"B5" 5-foot cut, 10 twenty-inch discs, Price $42 50. This week, $30.25
"B6" 6-foot cut, 12 " " " $48.50. " " $34 50
"B10" 10-foot cut, 20 " " " $80.00. " " $50 50

Our warehouse will be torn down next week—we have to sell 'em this week or move 'em. Buy this week and save 30%. Write or call.

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Agricultural Review.

BUTTE.

ABANDONING WHEAT GROWING.—Chico Record: John Parrott, who owns that ranch in southwestern Butte known as Llano Seco, has decided that wheat growing is not a profitable industry. For years past the farm has been devoted mainly to wheat growing, but low prices have induced Mr. Parrott to order a change. Accordingly this year the raising of stock has been begun upon an extensive scale. Hogs, cattle and sheep will be the source of income, and all effort will be made to get more from these products than cereals have yielded.

MONEY IN GOATS.—Oroville Register: James Nelson and his son have been shearing Angora goats for Wm. Brown, near Hurleton. The goat hair was unusually long, it measuring 16 inches on some of the goats. They average fully six pounds to the goat and the crop is worth 40 cents a pound. They sheared a little over 300 head. The goats are to be taken to a high range of hills back of Hurleton during the spring, where they will have good feed. He says Mr. Brown expects to have about 600 kids from his flock this season.

SHIPPING HEMP.—Gridley Herald: A carload of hemp was shipped from the Heany ranch, near Gridley, this week. It was consigned to New York, via New Orleans, from which place it will go by water. This is the first shipment of this year's breakage., and as the mill is still running and there is a large quantity of the material on hand, there will probably be a good many more cars shipped this season.

CALAVERAS.

DAMAGE FROM CHLORINE, SMOKE AND SLICKENS.—Angels Camp Mountain Echo: People residing on the west side of town and in the Rose addition are beginning to complain about the Lightner chlorine smoke and slickens. Those having ranches and cattle along the course where the water from the chlorine plant flows claim that the water is poisonous to their cattle and detrimental to their lands. Some litigation is liable to grow out of this matter yet.

COLUSA.

RAISIN GROWING THE INDUSTRY.—Colusa Sun: J. H. White says the farmers around College City are realizing the fact that there is money in growing Thompson's Seedless grapes for raisins and are putting in a vast quantity of that popular fruit. The College City country is acknowledged to be one of the best grape producing sections in the State.

COW BREAKS HER NECK IN A QUEER MANNER.—Colusa Sun: Sam Stormer, living a mile north of Colusa, lost a valuable cow Friday in a peculiar manner. There were several cows in the barn and two of them began fighting, when one of them probably reared and fell backward into a manger, falling in such a way that the weight of her body broke her neck, and she was found later by Mr. Stormer still fast in the manger and dead.

HUMBOLDT.

CREAMERY PRICES.—Arcata Union: Creameries in this section on March 15th paid as follows: Harpst & Spring, 20½c; Arcata Creameries, 21½c; Cauzzi Bros., 20¾c; Minors, 20½c; Silva, 20½c. Eel River Valley creameries, as far as heard from, paid the following prices for butter fat on the 15th ult.: Cold Brook, 20c; Cold Spring, 19c; Cream Valley, 19c; Crown, 20c; Eel River, 19c; Excelsior, 20c; Ferndale, 19c; Grizzly Bluff, 19c; Riverside, 18c; Sunset, 19c.

LOS ANGELES.

GRAPE FRUIT BECOMING POPULAR.—Los Angeles Times: All doubt as to the future demand for the pomelo may be solved by a careful review of the local field. It is not an exaggeration, perhaps, to say that one-half the residents of this part of the State have become permanent users of this fruit. At the packing houses every cull is carried away by the townspeople. The fruit is on sale at every fruit stand. These facts are all the evidence one needs of the coming popularity of the fruit in the Eastern markets, for the tastes of the people are similar in all sections. No fruit has been improved to such an extent during the last two decades. This is the cause of its general adoption by the public, and the demand for the fruit may be banked upon. No one is now rash enough to state that the California pomelos are not equal to the best qualities produced in Florida, and our fruit now awaits the general approval of the Eastern trade generally, which is inevitable.

FRUIT PROSPECTS. — Pomona Times, March 27: Judged by the bloom, there is a prospect of a large prune crop on the orchards that are left and that have been cared for; and by the same sign, apricots will be scarce and peaches plenty in this section.

MERCED.

PROFITS OF SMALL FARMING.—Dos Palos Star: In answer to the question, "Does a small farm pay," we are able to give the amount of produce sold by Fred Hadley of this place from his 16.75-acre ranch during the year 1900. Here is the statement:

Milk	$250 39
Stock	177 84
Eggs	60 37
Butter	29 37
Fruit	15 00
Potatoes	8 00
Poultry	5 00
Lard	5 00
Total	$550 67

ORANGE.

SUGAR BEETS DOING WELL.—Anaheim Gazette, March 28: J. Gustafson, one of the successful beet growers of Los Alamitos, was in town on Monday and reported the crop of beets growing nicely. He has planted 170 acres, has an excellent stand and is now engaged in thinning. Eight thousand acres of beets have been planted in his section, every acre of which looks well. Three thousand acres additional will be planted, making an area of 11,000 acres to supply the Los Alamitos sugar mill.

PLACER.

ORANGES AT PENRYN.—Orange growing has been successfully demonstrated by J. Parker Whitney of Rocklin, who publishes results on thirty acres in Washington Navels, clearing last season $133 per acre net over all expenses and $200 this season, marketing his crop before January 1st. Mr. Whitney is now planting 11,000 orange trees near Penryn.

RIVERSIDE.

ORANGES A MONTH EN ROUTE.—Riverside Enterprise: One of the local orange shipping firms shipped a carload of oranges to New York Feb. 28, and they have just received word by wire that the car arrived at the destination Monday evening. This is going through at the rate of twenty-six days for the trip, and it is no wonder that the fruit is spoiled by the time the Eastern buyer gets to see it.

SANTA BARBARA.

THRIVING BANANA PLANTS.—Santa Barbara News: A couple of fine specimens of banana plants were exhibited at John Dihel's store. The specimens showed the plants at their best. On one there is a bunch of ninety green bananas—one of the largest ever grown here. They were from a grove on the James Short place.

SANTA CLARA.

INCREASE IN STRAWBERRY ACREAGE.—San Jose Mercury, March 31: There will be a considerable increase in the strawberry acreage this year. Last season about 150 acres were in bearing. This year about 130 acres have been added to the fields, and about fifty or sixty acres which have for several years been devoted to the culture of the much-prized small fruit will be plowed up. All of the fields are under irrigation. The berries are already ripening in small quantities.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian, March 28: Wild blackberries are heavy in bloom.——No apple sales for the season have been reported to this date.——Apple trees are leafing rapidly and some varieties are in blossom.——The apricot crop is not so promising in this valley as it was two weeks ago, and the present estimates are for a crop slightly under that of last year.

PAJARO VALLEY PRODUCTS. — Watsonville Register: The local Board of Trade has compiled a table of statistics relating to the productions of the Pajaro valley. From these statistics the following excerpts are taken: Sugar beets, 65,417 tons; potatoes, 125,000 sacks; hops, 2700 bales; onions, 70,000 sacks; beans, 15,000 sacks; raspberries, 3000 chests; Loganberries, 3000 chests; blackberries, 3000 chests; apples, 800,000 boxes; apricots, 50,000 boxes; peaches, 50,000 boxes; cherries, 300 tons.

SOLANO.

DIVERSIFIED CROPS.—Dixon Tribune: The farmers on the islands in the Sacramento river have discovered that the land under cultivation there, although they produce enormous yields of wheat and barley, can be made to greatly increase profits by being made subject to other products. Unlike their neighbors on the mainlands of the country, who have soil adapted to growing many other products besides wheat and barley, both of which have been produced at a loss for several years, and which continues to be sown and reaped at a loss, the islanders have begun a system of diversification that gives promise of great benefit. The principal diversification at present is the growth of the white bean, and in some instances the profits per acre have been very handsome. Diversification is the lesson that must be learned by all the California farmers, and while some localities where it is practiced are furnishing striking illustrations of what may be done in that line, there are other places where the proverbial "freeze-out" must ensue before a change will be made.

SISKIYOU.

PROFITS FROM SUGAR PINE.—Dunsmuir News: A big sugar pine tree, lately cut on the Wells tract near upper Soda Springs by J. N. Field, is being made into shakes. Mr. Field estimates that the tree will produce at least 30,000 shakes which, at the present market price of $9 per thousand, will amount to $270. About 125,000 shakes will be made by Mr. Field this winter. As shakes are in demand, the production of this commodity at the price quoted is a very remunerative proposition.

SONOMA.

BLACKBERRY WAR AT SEBASTOPOL.—Santa Rosa Republican, March 28: The blackberry war which has been raging in the vicinity of Sebastopol the past few months continues. A lawsuit will in all probability be the outcome. The California Fruit Canners' Association claim they have bought out their competitor, T. E. Barlow, while that gentleman says the Association would not agree to his terms, and from the looks of things the only way to decide the question is in the courts. The situation is as follows: T. E. Barlow is a prominent blackberry grower of the Gold Ridge country, and upon his place over 10% of the blackberries of the county are raised. The price which the growers were receiving a few months ago, or before this war begun, was $32.50 per ton. This was not satisfactory to Mr. Barlow. He considered the cost of raising blackberries about $30 per ton, which by selling at $32.50 per ton, he would make a profit of only $2.50 per ton. His neighbors were selling at that figure, so he immediately commenced buying the berries himself, paying more than his competitor, the California Fruit Canners' Association. The price has advanced to $50 a ton. Mr. Barlow now wants the blackberry growers of the county to adopt a plan similar to that of the Watsonville strawberry raisers, and has submitted a like proposition to these same commission men to handle the blackberries of this county at the minimum price of $50 a ton.

WHOLESALE DESTRUCTION OF CHICKS BY A RAT.—Santa Rosa Press-Democrat: An account of the wholesale destruction of small chicks by a rat comes from Petaluma. C. F. Rickey, a well-known Cherry valley chicken raiser, lost eighty-four ten-day-old chicks in one night through the industry of one rat. The chicks were choice White Leghorn thoroughbreds; and, though there were several hundred other young chicks in the brooder, as well as eighteen ducklings, the rat chose the youngest and most valuable chicks for his carnival of slaughter.

OLIVES AND OLIVE OIL.—Healdsburg Tribune: P. D. Mothorn, who has an olive orchard on Mill creek containing 23½ acres of the finest imported varieties, harvested a crop this season of twelve or fourteen tons. Out of this he will manufacture about seventy-five gallons of pure oil and will pickle about 1200 gallons of olives.

STANISLAUS.

MONEY IN ORANGES.—Modesto Herald: A. Monotti tells us that his little two-acre orange grove close to town netted him about $200 per acre the past season. The grove is comprised of seven and ten-year-old Navels, splendid fruit that is ready for market from early in November to Thanksgiving day, according to the season. When all the trees are ten years old and older he expects to realize $250 per acre net.

STANISLAUS WHEAT AT THE EXPOSITION.—Modesto Herald: J. C. Spenker of Riverbank, one of our best known farmers, is in receipt of a letter of thanks from the U. S. Department of Agriculture for his contribution to the cereal exhibit of this country at the Paris Exposition. This exhibit, made in the name of the Secretary of Agriculture, was awarded the grand prize. The Department will issue a report of the exhibit as compared with the exhibits of other countries, and bulletins on grain investigations will follow.

SUTTER.

RENTING ORCHARDS TO CHINESE UNPROFITABLE. — Sutter County Farmer: The system of renting orchards to Chinese has been almost abolished in this section, and it is to be hoped that it will not be revived. While there may be some exceptions to the rule, it has been generally the case that the owner of the orchard is the loser in the end by the damage done to his trees, and in addition to this, all the fruit growers are more or less affected by the condition of the market when the Chinese cured fruit is placed in competition with their own fruit. The poorly prepared and cured fruit which the Chinese renters throw onto the market indiscriminately is too often used by the buyers as the means of beating down the price of the good product, and the fruit business suffers largely thereby. The man who rents valuable property to Chinese can expect much annoyance and is lucky if he does not burden himself with an expensive lawsuit before he gets through with it.

VENTURA.

THE BEET SEASON.—Oxnard Courier: The beet season is progressing more rapidly than it has in any previous year in the history of the crop at Oxnard. The dry weather, though not desirable in itself, has given farmers the opportunity to get everything planted. Already 11,000 acres are planted and in two or three weeks the whole crop will be in.

YOLO.

PROFITABLE CROP.—Davisville Enterprise: Sam Montgomery gives some practical suggestions in regard to alfalfa. He says the ground should first be plowed in the ordinary way, leveled and leveed. Next it should be plowed again, not less than ten inches deep and thoroughly worked until the soil is pulverized as fine as a garden, so that the seed may be sown any time from the 1st of October to the 1st of April, with the preference slightly in favor of October and November. In reciting his own experience, he stated that on his farm of 170 acres he has had forty acres in alfalfa. This forty-acre tract paid living expenses and other expenses of the farm, the deficit caused from raising grain on the remaining 130 acres included, as he states for a fact that he has lost money on the portion sown to grain. He claims that Putah creek land will grow alfalfa profitably for three seasons at least with one seeding and without irrigation, producing two crops of hay and three months' pasturage.

ALMOND HULLING AND CRACKING MACHINES.—Davisville Enterprise: Mr. Walter G. Read of this place has quite an extensive plant, including forges, lathes and other machinery for shaping, cutting and bending the iron and steel required in constructing the almond-hulling machine, of which he is the inventor. It is generally admitted by almond growers who know of Mr. Read's inventions that his machines are the best on the market for hulling, cracking and separating. He has also an apricot cracker and separator.

LEMONS DOING WELL.—Winters Express: To prove that Yolo is a lemon country, G. W. Chapman has kept tally on a tree he has from which he has already picked 884 fine lemons, every one of which is handsomely colored and of almost identical size, and they are very juicy and fragrant. Sam Taylor has a fine tree, from which he has already sold $24 worth, and, like Mr. Chapman's tree, there is fruit yet on it. At the retail price the Chapman tree has yielded over $15 worth of lemons.

FARM PROPERTY BRINGS GOOD FIGURES.—F. W. Moorfoot, late of Perry, Iowa, has purchased Theodore Dopking's dairy farm, consisting of sixty-five acres of alfalfa, with brick residence, two barns, other outbuildings and improvements, which is situated 1 mile east of Woodland, for $11,375, or $175 per acre.

YUBA.

DON'T KILL THE OWLS.—Marysville Democrat: A young man named Heintzman, 10 miles from Yuba's capital on the road to Downieville, caught four young owls and put them in a cage outside the house. That night the mother owl found them and caught two mice and two gophers and fed them. The next night she caught two more mice and nine gophers, which she brought and fed to her young. Dr. Jewett of Marysville was at the Heintzman farm and saw the nine gophers and two mice brought to the cage.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O

THE HOME CIRCLE.

Heads Up.

Don't kick and whine,
Just get in line
With the fellows who've grit and pluck;
Don't frown and scowl,
Look glum and growl—
Stop prating about ill luck.

Lift up your head,
Don't seem half dead,
Stop wearing a wrinkled face;
Give smiling hope
Sufficient scope,
And joys will come apace.

Out on the man
Whose little span
Is full of grief and gloom,
Always dreary,
Never cheery,
From trundle-bed to tomb.

Give me the chap
Who, whate'or may hap,
Looks up, and is cheerful still,
Who meets a brunt
With smiling front,
And nerve, and vim, and will.

—Jay Bee in Success.

Their Daughter-in-Law.

"Your last day? Dear, dear, must you go to-day, Harvey?" said Mrs. Seeley, looking across the breakfast table at her son with affectionate concern.

And her daughters Kitty and Margery echoed her words.

"Couldn't you have got off for another week?" asked the father, breaking a hot roll carefully. "Now that you're partner, I thought—"

"Now that I'm partner, it's hard work getting off," responded Harvey Seeley. "It was all I could do—"

He paused suddenly.

"What was all you could do?" inquired Kitty.

"Well," said Harvey, laying down his knife and fork with a beaming smile, "here goes; here's the news I've been saving up for you till the last, from a natural modesty. It was all I could do to get things arranged so that I could go on my wedding trip a month hence. I am going to be married."

Kitty's spoon fell into her saucer with a clatter and Mr. Seeley dropped his roll hastily.

"Married!" said Margery breathlessly.

Mrs. Seeley alone remained calm.

She rolled up her napkin, put it in its ring and looked at her son through her gold-bowed glasses composedly.

She felt, however, that this was an important crisis.

When Harvey—their only son—had, with commendable independence, left his pleasant home "to get a start" in the neighboring city they had all expected great things of him.

He would be rapidly successful; he would distinguish himself in the profession he had chosen and amass a fortune; and he would woo and win some sweet girl, with a long row of ancestors—the Seeleys, being themselves a good old family, were great respectors of blue blood—a host of accomplishments and a heavy dowry.

Their hopes had seemed likely to be fulfilled. Harvey had proved himself possessed of remarkable business qualities; he had risen quickly, and had recently exceeded their wildest ambitions by being made a junior partner of his firm.

All that now remained to be desired was his safe conquest of the beautiful and aristocratic young person of their dreams, with her many talents and substantial inheritance.

It is not to be wondered at therefore, that the girls were trembling with eagerness; that Mr. Seeley fumbled with his watch chain in nervous suspense and that Mr. Seeley opened her lips twice before she found strength to propound the all-important question:

"Who is she?"

"She is a Miss Dora Berdan at present," said Harvey smilingly.

"Berdan?" Mrs. Seeley repeated, and raised her brows inquiringly. "I don't think I have heard of the family."

"Berdan?" Mrs. Seeley repeated. They are quiet people."

"Not at all likely," Harvey rejoined, musingly.

"I have not heard of them," said Mrs. Seeley. "Where do they live?"

"In Weyman street," responded Harvey.

Mrs. Seeley fell back in her chair with a little gasp; her husband turned a dismayed face upon his son; and Kitty and Margery gave little screams.

"Weyman street!" It was miles from the region of aristocracy; it was peopled with working girls, and scamstresses and small shopkeepers; and with street venders and old apple women for all the Seeleys knew.

"Not Weyman street, Harvey?" said his father, appealingly.

"Certainly; Weyman street," Harvey repeated.

"But she is not—she cannot be of good family living in Weyman street?" said Mrs. Seeley, anxiously.

"The family is quite respectable," her son responded, quietly. "Dora's mother is a widow. She sews for a lace-goods house and Dora has been assistant bookkeeper in our establishment; that is how I met her.

Mrs. Seeley groaned.

"A bookkeeper—a seamstress!" she ejaculated. "Oh Harvey, you could not have done worse!"

"A penniless girl!" said his father, solemnly. "And after all we have hoped for you! No, it could not be worse."

"A common working girl!" said Kitty in a choking voice. "And everybody will know it! Oh, Harvey, it couldn't be worse!"

The young man looked from one to another in astonished, hurt and half-contemptuous silence.

Margery turned to him, with a gentle sympathy mingling with the dismay in her face.

"Perhaps," she said, hopefully—"perhaps there is something to make up? Perhaps she is a wonderful beauty, or a great genius, or something?"

Harvey gave her a grateful smile.

"I think her pretty, of course," he said. "But I suppose that's because I'm fond of her. I don't think she would be called a beauty. And as for genius—she's very clever with accounts; but she doesn't sing, or paint, or anything of that sort. She's never had the time or money for such things, poor girl!"

But Margery had turned away with an impatient gesture.

"There is nothing, then," she said, despairingly. "No; it couldn't be worse!"

Harvey rose from his seat with an energy which set the bell in the castor jingling.

"This is absurd!" he said indignantly. "It is more than absurd; it is unjust and narrow-minded. How sensible—presumably sensible people," Harvey corrected, rather bitterly, "can say, in regard to a person they have never seen, that 'it could not be worse,' is past my comprehension."

"We will not talk of it," said Mrs. Seeley, holding up a restraining hand. "Discussion will not mend matters. And you are to be married next month?"

"On the ninth," Harvey rejoined. "Of course you will all be there?" he added, rather dubiously.

"By no means!" said his father, shortly.

"You could hardly expect it," said Mrs. Seeley, reproachfully.

"Very well; 'if Mohammed won't come—' You've heard the observation. We shall pay you a visit immediately on our return from our wedding tour with your kind permission. You must know Dora."

When he left the house, an hour later, he had the required permission.

His mother and the girls had even kissed him good-bye, in an injured and reproachful way, and his father had shaken hands, coolly.

But his ears still rang with that odious assertion: "It could not be worse!" and he was thoughtful all the way back to the city.

II.

The Seeleys were in a state of subdued excitement.

Harvey's wedding tour was completed, and they had received a telegram that afternoon to the effect that he would be "on hand" to-night, with his new wife.

The dining-room table was set for dinner, and Mrs. Seeley wandered from one end of it to the other, nervously.

Her husband sat under the chandelier with his evening newspaper; but he was not reading it. Kitty and Margery fluttered about uneasily, watching through the window for the carriage from the station.

"I hope," said Margery, with a nervous attempt at cheerfulness, "that she will be barely decent—presentable. Think of the people who will call! I hope she won't be worse than we're prepared to see her."

"She couldn't be," said Mrs. Seeley, dismally.

There was a roll of wheels, and the twinkle of the carriage lamp at the door, and the bell rang sharply.

Kitty and Margery clasped hands in sympathetic agitation; Mr. Seeley dropped his newspaper and arose; and Mrs. Seeley advanced toward the hall door with dignity.

It was opened wide before she could reach it, and Harvey entered, his face suffused with genial, blissful smiles.

"This is my wife," he said, proudly. "My mother, Dora; my father; my sisters Kitty and Margery."

And, with a caressing touch, he took her by the hand and led forward among them—

What?

Mr. Seeley gazed with startling eyes; Mrs. Seeley dropped the hand she had started to hold out, with her face growing ashy, and Kitty and Margery gasped.

For what they saw was a woman of apparently forty years with a face powdered and painted in the most unblushing manner, with thin gray hair crimped over a wrinkled forehead in a sickening affectation of youthfulness, and with a diminutive, gaily-trimmed bonnet perched thereon, with an affected mincing gait and a simpering smile.

"This is my wife," Harvey repeated. "Have you no welcome for her?"

The bride tittered.

"Mebbe they think I ain't good enough for 'em dear." She observed.

"Impossible, my pet," Harvey responded; and patted her falsely blooming cheek affectionately. "Besides, if you were but a shadow—a caricature of your beautiful self, they would not have been surprised. They were prepared for the worst."

He looked at his horrified relatives meaningly.

The truth of his words flashed over them.

Yes, they had all said, repeatedly, that "it could not be worse." But this wretched bedizened creature—had they dreamed of this?

Harvey watched them with an undisturbed smile—his father, turning away at last and rubbing his forehead with his handkerchief weakly; Mrs. Seeley gazing at her daughter-in-law with a dreadful fascination, and the girls sinking into chairs in dismayed silence.

"Well, mother," said Harvey, lightly, "of course a new addition to the family is an object of interest; but don't forget that I have an appetite, and getting married has rather improved it. Take off your bonnet, my own. Here Kitty!"

Kitty came forward with a set face and tightly closed lips, to receive the marvelous combination of beads and silk flowers held out to her with a disgusting air of sprightliness. She was afraid to trust herself to speak.

Poor Mrs. Seeley, sick at heart, had made her way to the bell and rang it, and dinner came down presently.

"Turtle soup!" the bride observed, looking around the table with a girlish smile; ain't nothing I admire so! Just past that celery, father-in-law. Delicious, ain't it, darling?"

"Extremely, my dear," said the bridegroom, complacently.

Ignorant and vulgar! What dreadful things would they discover next?

It was an evening they never forgot. The unfortunate parents sat with pale faces and unsteady hands staring into the empty plates, or looking at each other with fresh horror at each simpering, senseless, ungrammatical remark of their terrible daughter-in-law.

Kitty and Margery excused themselves during the second course, and

BLOOD

We live by our blood, and on it. We thrive or starve, as our blood is rich or poor.

There is nothing else to live on or by.

When strength is full and spirits high, we are being refreshed, bone muscle and brain, in body and mind, with continual flow of rich blood.

This is health.

When weak, in low spirits, no cheer, no spring, when rest is not rest and sleep is not sleep, we are starved; our blood is poor; there is little nutriment in it.

Back of the blood, is food, to keep the blood rich. When it fails, take Scott's emulsion of cod-liver oil. It sets the whole body going again—man woman and child.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

GLENN RANCH,

Glenn County, : : : : California,

FOR SALE

In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

Mt. Campbell Orange Tract,

22 Miles East of Fresno, near Reedley.

SOIL—Red dry bog; the very best.

WATER—Large Alta canal and reservoir.

LOCATION—High sloping mesa above frost line

Now offered for sale with water at $75 to $100 per acre in 10 or 20 acre tracts.

W. N. ROHRER, FRESNO, CAL.

flew to their rooms to cry themselves to sleep, in an agony of dismay and mortification.

"I shan't think of setting up," said the bride, rising from the table with an apologetic giggle, and with the last of her dessert held aloft, "I'm too worn out. If anybody calls—o' course everybody'll call—just tell 'em I'll see 'em to-morrow. Come on, dear!"

And she tripped upstairs with a juvenile nod over her shoulders, while her beaming young husband followed.

Mrs. Seeley wrung her hands despairingly.

"We said it could not be worse," she said, faintly. "But this! How shall we endure it?"

"I shall not endure it!" said her husband; his face had grown almost careworn during the last two hours. "I shall send them packing away tomorrow, and if ever he enters my house again—"

He brought his hand down on the table threateningly.

"But that will not help matters," said his wife, miserably. He is ruined; we are disgraced; and everybody will know it."

There was a silence.

"I had pictured her to myself," said Mrs. Seeley, beginning to sob, "as a young person—a person of a suitable age for my poor misguided boy, decently educated and at least a lady. And even then, when I did not doubt that it was such a one he had chosen, I thought myself the most unhappy person in the world, because she had neither wealth nor an old name. Surely it is a judgment upon us. Oh, was there ever so dreadful a thing?"

"Probably not," said her husband, grimly.

It was a solemn group which waited in the dining room the next morning for the appearance of the newly wedded couple.

There were marks of a tossing night on every face—in troubled brows, swollen lids and pale cheeks—and a general gloom prevailed.

Mr. Seeley stood in front of the fireplace, watching the hall door with a stern face. He was master in his own house at least, and he was determined that it should not be disgraced by his son's wife for an another hour.

"Please get them away before anybody comes, papa!" said Kitty. "It would be dreadful if anybody were to see her!"

"Dreadful!" Margery echoed, with a groan.

There were footsteps on the stairs, Mrs. Seeley turned with a shiver, and the girls caught their breath.

The hall door opened.

The waiting group looked up slowly.

Would she not be still more terrible in the broad daylight—that artificial simpering horror?

But it was not the sight they were prepared to see which the open door disclosed; it was not a painted, powdered semblance of a woman who came slowly, with a timid smile and downcast eyes.

She was a slender, sweet-faced young lady, with shining brown hair crowning a charming head, peachy cheeks, in which the color came and went, and soft, dark eyes, which studied the carpet in pretty timidity; with dainty slippered feet, and a lace-trimmed wrapper, fitting snugly to a perfect form.

"Good morning," she said, gently.

Harvey had followed her closely.

"Well, Dora," he said, looking from one to another of his speechless relatives, quizzically, "they don't seem inclined to speak to you."

But Margery had come toward her hastily, and seized both of her hands.

"Was it you all the time?" cried Margery, joyfully. "And the gray hair was false, and the wrinkles were put on, and all that dreadful powder? Oh, Harvey, how could you?"

"I begged him not to," said the pretty bride, raising her dark eyes sweetly. "I told him it would be cruel; and such a time I had saying all those shocking things he had taught me, and keeping my wig straight, and trying not to laugh! Shall you ever forgive us?"

"Forgive you! Oh, my dear!" cried Mrs. Seeley, incoherently.

And she hurried forward with a sob of joy, and embraced her daughter-in-law wildly.

"It was rather tough," said Harvey, gaily. "I felt like a villian when I saw the way you all took it. But you know what you said, every one of you—that it 'couldn't be worse.' I thought I'd demonstrate to you that it could. Dora is nineteen instead of forty; she can speak correctly when she makes an effort, and I can heartily recommend her for a 'willing and obliging' good-tempered and thoroughly capable girl—the sweetest in the world."

Mr. Seeley left the fire-place and came and clasped his daughter-in-law in his arms, with a beaming face, and Kitty kissed her effusively."

"It was a dreadful lesson," said Mrs. Seeley, looking up with a tearful smile; but I am afraid we needed it, my son."—Saturday Night.

The Timid Chap Never Wins.

There is something sublime in the youth who possesses the spirit of boldness and fearlessness, who has proper confidence in his ability to do and dare, writes Orison S. Marden in April Success.

The world takes us at our own valuation. It believes in the man who believes in himself, but it has little use for the timid man, the one who is never certain of himself, who cannot rely on his own judgment, who craves advice from others, and is afraid to go ahead on his own account.

It is the man with a positive nature, the man who believes that he is equal to the emergency, who believes he can do the thing he attempts, who wins the confidence of his fellow man. He is beloved because he is brave and self-sufficient.

Those who have accomplished great things in the world have been, as a rule, bold, aggressive, and self-confident. They dared to step out from the crowd, and act in an original way. They were not afraid to be generals.

There is little room in this crowding, competing age for the timid, vacillating youth. He who would succeed today must not only be brave, but also dare to take chances. He who waits for certainty never wins.

He Gave Andrew Carnegie His Start.

James D. Reid, the veteran telegrapher who had the distinction of giving Andrew Carnegie his first job as a messenger boy, is still living. In Success for April, Mr. Reid recalls the incident which occurred fifty years ago, in the Atlantic & Ohio Telegraph office in Pittsburg, as follows:

"He was so determined that I became interested in him at once. He seemed to have determination written on his face. His eagerness to work and learn were very noticeable. Before he had been with me a month, he asked to be taught telegraphy. When I consented, he spent all his spare time in practice, transmitting and receiving by sound, and not by tape. He was the third operator in the United States to read the Morse signals by sound."

This, in Mr. Carnegie's mind, was his best move. After long and successful years, Mr. Carnegie wrote of this change:

"My entrance into the telegraph office was a transition from darkness to light, from firing a small engine in a dirty cellar, to a clean office where there were books and papers. That was paradise to me, and I bless the stars that sent me to be a messenger in a telegraph office."

Oh, These Misfit Occupations!

Half the world seems to have found uncongenial occupations. Servant girls are trying to teach; natural teachers are tending store; good farmers are murdering law, while Choates and Websters are running down good farms; and good farmers, in turn, are farming still in Congress. Artists are spreading daubs on canvas who should be whitewashing board fences. Shoemakers write good verses for the village paper and natural statesmen are pounding shoe lasts, while other shoemakers are cobbling in legislative halls. Good mechanics and electricians are trying to preach sermons, and wondering why their congregations continue to sleep, while the Beechers are failing as merchants.—Success for April.

DOMESTIC ECONOMY.

Various Methods in Which Prunes May Be Used.

NUMBER VII.

WITH ANGELICA AND SPICES.—Place in your stewpan one quart of prunes, cover with water and stew fifteen minutes. Add half-pint Angelica wine, allspice and cloves—teaspoonful of each—half cup white sugar and a piece of butter size of a hen's egg. Cook all for ten minutes longer, stirring frequently. Serve warm.

STEWED TO SYRUP.—I have lived ten years in a prune orchard, and met many people who did not like prunes until I taught them my way of cooking them. Five years ago I went East and found no one who liked prunes or knew how to cook them. After teaching them my way, they all liked them very much. Here it is: In the evening take the desired amount of prunes, wash them well, put them in a porcelain kettle, just cover them with cold water, and let stand all night. In the morning put them on the stove in the same water and boil until tender. Don't stir or mash them. When tender set them back on the stove to simmer until the juice has become a thick syrup and very little of it left in the kettle. Then pour into a dish. When cold, to be eaten with or without cream. The long cooking brings out the flavor and makes them healthful and delicious. "A dish fit for the gods." Try it.—MRS. K. M. TILESTON.

PRUNES EATEN LIKE FIGS.—Put the prunes in a wire basket and dip them into a kettle of boiling water. Hold them in it two or three minutes. Then take them out, pour them on a cloth and pack them while hot in tin cans. Seal the cans and set away for a month or longer. They will keep a long time and become very tender and delicious. I prefer the quart can to pack them in, as they dry out soon after the can is opened and the air gets to them.

STEWED WITH CLARET.—If prunes are washed and soaked in twice as much water forty-eight hours, then boiled twenty minutes, adding a glass of claret to a quart, but no sugar, they will never be called insipid. This is the French way of cooking them, and they are served every day, without tiring the palate. They should be almost dry, and the natural full size. Never mashed.

You May Need Pain-Killer

For Cuts Burns Bruises

Cramps Diarrhœa All Bowel Complaints

it is a sure, safe and quick remedy,

There's ONLY ONE Pain-Killer Perry Davis'.

Two sizes, 25c. and 50c.

Wall Paper FOR UNFINISHED ROOMS.

Ingrain effect. In blue, terra cotta, green and red. Put on with tacks or mouldings; no paste. Covers any rough surface. Write for samples and prices.

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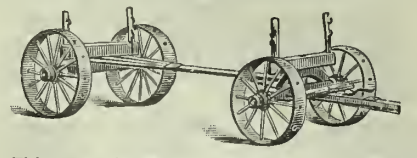
Farm Wagon only $21.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30-inch wheels with 4-inch tire, and sold for only $21.95.



This wagon is made of the best material throughout, and really costs but a trifle more than a set of new wheels, and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.

A STAR DRILLING MACHINE

put to work in almost any community will make more money for its owner than he can derive from three or four times the capital invested in anything else. It thus takes but little capital to get into an honorable and profitable business. They are Ideal machines for water, oil, gas and salt wells, and are unequalled for making "bore holes" for testing mineral lands. Drill all sizes and depths. We carry full line of drill supplies, tools, cables, etc. Write at once for Free Catalogue.

Star Drilling Machine Co., Akron, Ohio.

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Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, thorough system, intimate acquaintance with the subjects of inventions in our own community, and our most extensive law and reference library, containing official American reports, with full copies of U. S. Patents since 1872. All worthy inventions patented through DEWEY, STRONG & CO.'s Patent Agency will have the benefit of a description in the *Mining and Scientific Press*. We transact every branch of patent business, and obtain patents in all countries which grant protection to inventors. The large majority of U. S. and foreign patents issued to inventors on the Pacific Coast have been obtained through our agency. We can give the best and *most reliable* advice as to the patentability of new inventions. Our prices are as low as any first-class agencies in the Eastern States, while our advantages for Pacific Coast inventors are far superior. Advice and circulars free.

330 MARKET ST., SAN FRANCISCO, CAL.

And 918 F Street, N. W., Washington, D. C.

NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock, A. M., Wednesday, the 10th day of April, 1901.

I. C. STEELE, President.

CHARLES WOOD, Secretary.

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BECAUSE they are made on correct principles, therefore give the best results. The Menzel Hardware Co. of Santa Clara, Cal., state that "they have put up a large number of pumps of all kinds this season, but yours give us and our customers the best satisfaction."

BURTON PUMP AND MACHINE WORKS have removed to 44-46 Main St., San Francisco, Cal., and will give full particulars and furnish estimates of pumps run with gasoline or steam engines. Horse powers or windmills—complete plants. Closing out stock of second-hand gasoline engines, 1 to 20 H. P.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 3, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	80¼@80½	80⅜@80⅞
Thursday	80⅜@80¾	80¼@81⅛
Friday	80⅝@81	80¾@81⅜
Saturday	80¾@81⅛	80⅞@81⅛
Monday	80⅜@79½	81 @79⅝
Tuesday	78¾@79½	78⅞@79¾

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	6s 0⅞d	6s 0¾d
Thursday	6s 1 d	6s 0⅞d
Friday	6s 1 d	6s 1 d
Saturday	6s 1⅛d	6s 1⅛d
Monday	6s 0⅝d	6s 0⅝d
Tuesday	6s 0½d	6s 0½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 03⅛@1 03½	1 05¾@1 06⅜
Friday	1 03⅝@1 04¼	1 06⅞@1 07⅛
Saturday	1 03¼@——	1 06⅜@1 06¾
Monday	1 03 @1 03¼	1 05⅛@1 05⅝
Tuesday	1 02⅝@1 01¼	1 04⅝@1 05
Wednesday	1 00⅞@1 00⅛	1 04⅝ @1 04¾

WHEAT.

The wheat market in this center has inclined more against buyers the past week than for some months preceding. The quotable improvement was not marked, however, and there was very little wheat changed hands at any price. Damaging weather in Argentina was given as the cause for a firmer speculative market East, but prices for options in Eastern and foreign centers did not move upward very rapidly or to any great extent, so there was evidently not much confidence in any serious shortage on account of bad weather in South America. In the local market, there was cause nearer home and more substantial than vague reports about Argentina weather, to develop at least a little more firmness to wheat values than had been current for some months. This cause was an easier feeling in ocean freights. A large wooden ship was chartered for wheat to Europe at £1 13s 9d, equivalent to about £1 15s for iron ships. This is a decline of fully 5s from extreme rates lately established. One iron ship arrived the past week under charter at £2 1s 3d. A reduction of 5 shillings per long ton in freights is equivalent to fully 5c per cental, but wheat has not been salable $1 per ton higher than a week ago. To have bought freely, however, the payment of fully this difference above last quotations would have been necessary. There is still room for further reduction in freight rates, and at same time leave ships much more profitable property than is wheat land. The United States visible supply east of the Rockies was reported at 54,749,000 bushels, indicating an increase for the week of 35,000 bushels. To-day (Wednesday) the market is weak, with options at lowest point since last review.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.04⅛@1.00⅝c.

December, 1901, delivery, $1.07⅞@1.04⅛.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.00⅞ @ 1.00⅛; December, 1901, $1.04⅝ @1.04⅛.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	97½	@1 00
Oregon Valley	1 00	@1 01¼
Washington Blue Stem	1 00	@1 02½
Washington Club	97½	@1 00
Off qualities wheat	95	@ 97½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	-s-d@-s-d	6s3½d@6s4d
Freight rates	40@41¼s	35@36¼s
Local market	$0 96¼@1 00	$0 97½@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on March 1st and April 1st:

Tons—	April 1st.	Mar. 1st.
Wheat	*104,113	112,805
Barley	†25,743	39,173
Oats	3,469	4,024
Corn	245	490

*Including 79,094 tons at Port Costa, 24,432 tons at Stockton.

†Including 17,414, tons at Port Costa, 4042 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 8692 tons for the month of March. A year ago there were 159,077 tons wheat in Call Board warehouses.

FLOUR.

There is a moderate movement, both for export and on local account. Values are fairly steady, especially for desirable makes, having an established reputation. Spot supplies are not particularly heavy, but a greater demand than at present exists could be accommodated.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

Business in this cereal has been mostly in feed descriptions, values for which remained close to the figures last noted, with market decidedly firm in tone. Stocks in Call Board warehouses showed a reduction in March of 13,430 tons. In brewing and export barley there was very little trading observable, and quotable values for high-grade barley remained practically the same as for months past. Free purchases could not have been effected, however, without paying an advance. Quotable values for choice to select qualities of barley are now relatively lower than for common grades, and the latter at best figures lately established continue decidedly cheap. In the speculative market sales were few, there being no special selling pressure, and operators not caring to purchase freely at the prices asked.

Feed, No. 1 to choice	77½@	80
Feed, fair to good	75 @	76½
Brewing, No. 1 to choice	80 @	87½
Chevalier, No. 1 to choice	—— @	——
Chevalier, No. 2	—— @	——
Chevalier, poor	—— @	——

OATS.

Offerings continue of light volume and are mostly of rather ordinary quality. Market lacks firmness for common grades, but for choice to select is not favorable to buyers. Only very limited quantities can be placed, however, at extreme figures. There are no large stocks of oats in Oregon or Washington, and arrivals from there during balance of the season will likely be of very slim volume.

White Oats, fancy feed	1 42½@	1 47½
White, good to choice	1 30 @	1 37½
White, poor to fair	1 20 @	1 27½
Gray, common to choice	1 20 @	1 37½
Milling	1 42½@	1 47½
Surprise, good to choice	1 42½@	1 50
Black Russian	1 12½@	1 30
Red	1 20 @	1 45

CORN.

Market is no better supplied than for weeks past. The limited quantities in stock are being in the main quite steadily held. Not much is required to satisfy the demand, however, at existing rates.

Large White, good to choice	1 15 @	1 17½
Large Yellow	1 15 @	1 17½
Small Yellow	1 50 @	——
Eastern, in bulk (carload lots)	1 08 @	1 10

RYE.

Values remain at a low range. There is considerably more offering to arrive than can be accommodated with immediate custom, except at lower figures than quoted.

Good to choice, new	80 @	82½

BUCKWHEAT.

Market is lightly stocked, but quiet at the quotations. Dealers could not be induced to stock up heavily at these figures.

Good to choice	1 85 @	2 00

BEANS.

Some parties have been talking weakness on white beans, but buyers are unable to find desirable white beans of any variety at lower prices than have been current for some weeks past. Stocks of white descriptions are too light to admit of much business, even at high prices. Limas are being very firmly held, with offerings quite limited, both here and at Southern supply points. Colored beans are ruling quiet, but aside from Pinks and Bayos, there are not many on market. Offerings are principally Pinks, and for this variety the market is rather weak.

Pea, fair to good, 100 lbs	—— @	——
Small White, good to choice	4 75 @	4 90
Lady Washington	4 00 @	4 15
Butter	4 25 @	4 50
Pinks	1 85 @	2 00
Bayos, good to choice	2 65 @	2 75
Reds	3 00 @	3 25
Red Kidney	4 00 @	4 25
Limas, good to choice	5 90 @	6 00
Black-eye Beans	2 75 @	3 00
Horse Beans	1 75 @	2 00
Garbanzos, large	2 00 @	2 25
Garbanzos, small	1 25 @	1 75

DRIED PEAS.

There are few domestic now offering and not much inquiry for either Green or Niles, millers and jobbers being fairly stocked for the time being with Eastern product. Niles are most difficult to place to advantage.

Green Peas, California	2 65 @	2 80
Niles Peas	1 60 @	1 75

WOOL.

Improved conditions are reported in Eastern and foreign centers, but local market is still far from satisfactory. There is some wool changing hands here, however, and at slightly better values than have been lately nominally current. Indications are that a more active and firmer market will be soon experienced. Some purchasing is being done in the interior at relatively better prices than are quotable at this center.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarse to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

Market is quiet and is likely to remain so during balance of the season, stocks on this coast of last year's hops being practically all out of first hands, and supplies now carried by local jobbers being of very small proportions. Owing to the inactivity prevailing, values are largely nominal.

Good to choice 1900 crop	13½	@16

HAY AND STRAW.

Demand for hay is slow, with offerings fairly liberal, and market favorable to the buying interest, especially for other than the most select qualities of Wheat and mixed Wheat and Oat. Quotations are without material change, but transfers at full figures are the exception.

Wheat	8 00	@13 00
Wheat and Oat	8 00	@11 50
Oat	7 00	@11 00
Barley	6 00	@ 8 50
Volunteer	5 00	@ 7 00
Alfalfa	8 00	@ 9 50
Stock	5 00	@ 7 00
Compressed	8 00	@12 50
Straw, ₩ bale	40	@ 47½

MILLSTUFFS.

Most descriptions of millstuffs have been commanding steady figures. Bran and other mill offal were in light supply. Tendency on Rolled Barley was to higher prices. Last quoted rates on Milled Corn are being well maintained.

Bran, ₩ ton	14 50	@15 00
Middlings	17 00	@19 00
Shorts, Oregon	15 50	@17 00
Barley, Rolled	16 50	@17 00
Cornmeal	25 00	@ ——
Cracked Corn	25 50	@26 00

SEEDS.

Little doing in this department, stocks not being of sufficient magnitude to permit of any special activity. Mustard seed is wholly out of stock. There is no Flaxseed offering worth mentioning, and present supplies of Alfalfa seed are of very small proportions. The light jobbing trade in bird seed is at generally unchanged values.

	Per ctl.	
Mustard, Trieste	——	@——
Mustard, Yellow	——	@——
Flax	2 50	@3 00
Alfalfa, Utah	9	@ 9½
Alfalfa, California	8	@ 8½
	Per lb.	
Canary	3¼	@ 3¾
Rape	2	@ 2½
Hemp	3	@ 3½

BAGS AND BAGGING.

The Grain Bag market is firm at figures current for a fortnight or more past. Some fears are expressed of a corner and of prices being crowded to high levels at harvest time. The attempted corners in Grain Bags of recent years have proven failures, although it must be admitted that conditions are favorable this season for dealers advancing prices, despite the State trying to regulate the market by turning out a few prison-made bags. If the State authorities cannot furnish more bags than they have been doing, they might as well abandon the field so far as attempting to benefit the vast majority of farmers or of regulating the price of this article.

Calcutta Grain Bags, buyer June-July	6¾	@ 7
Calcutta Grain Bags, spot	6⅝	@ 6¾
San Francisco Grain Bags, 22x36, spot	6⅝	@—
State Prison Bags in lots of 2000, ₩ 100.5	65	@—
Wool Sacks, 4 lbs	32½	@35
Wool Sacks, 3½ lbs	30	@32½
Fleece Twine	7½	@—
Gunnies	—	@12½
Bean Bags	4⅞	@ 5¼
Fruit Sacks, cotton	6½	@ 7¼

HIDES, PELTS AND TALLOW.

Hide market is fairly steady but very quiet. Pelts are dragging at quotably unchanged values. Demand for Tallow is about sufficient to absorb at prevailing rates all immediate offerings.

HONEY.

Despite general expectations and contrary to experience of previous years, new honey is reported on market. For some new Amber Extracted from Ventura county 6c. is asked, but this is above the views of buyers. Old is still offering in moderate quantity, both Comb and Extracted, mostly amber.

Extracted, White Liquid	6	@ 6½
Extracted, Light Amber	4½	@5
Extracted, Amber	4	@ 4½
White Comb, 1 lb frames	12	@13
Amber Comb	9	@11
Dark Comb	6	@ 8

BEESWAX.

Spot stocks and offerings are of small volume. Quotable values remain as previously noted.

Good to choice, light, ₩ lb	26	@28
Dark	24	@26

DO YOU NEED A CREAM SEPARATOR THIS YEAR?

IF SO, let us send you a new catalogue, and also have the nearest local agent personally place the facts before you. Try a machine and decide in that way if you wish.

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LIVE STOCK AND MEATS.

Beef is commanding steady prices, with no likelihood of soon ruling lower. Now that the Lenten season is ended, an increased demand is looked for. Mutton has been in ample supply for current requirements, and although not very much lower, the market has ruled weak. Lamb and Veal brought much the same prices as preceding week, with latter in lightest supply. Hogs continued in good request and brought advanced figures, there being no excess of offerings.

Beef, first quality, dressed, net ℔ lb	7¾@ 8
Beef, second quality	7½@ 7¾
Beef, third quality	6½@ 7½
Mutton—ewes, 7½@—o; wethers	7½@ 8½
Hogs, hard grain fed, medium	6½@ 6⅝
Hogs, small, fat	6½@ 6⅝
Hogs, large. hard	6¼@—
Hogs, feeders	—@—
Hogs, country dressed	8 @—
Veal, small, ℔ lb	8 @ 9½
Veal, large, ℔ lb	7½@ 8½
Lamb, spring, ℔ lb	9½@10½

POULTRY.

While the market for common old fowls was not particularly active nor firm during the greater part of the week, choice poultry of most kinds, both young and old, but more particularly fine young stock, was in good request and brought much the same figures as preceding week. Turkeys did not meet with much custom, neither were many offered for sale. Ducks were scarce and sold in a small way up to $13.50 per doz. for choice young, but this was not a quotable figure.

Turkeys, live hens, ℔ lb	13 @ 14
Turkeys, live gobblers, ℔ lb	10 @ 11
Hens, California, ℔ dozen	5 00 @6 00
Roosters, old	4 50 @5 00
Roosters, young (full-grown)	7 00 @8 00
Fryers	5 50 @6 50
Broilers, large	4 50 @5 00
Broilers, small	2 50 @3 50
Ducks, old, ℔ dozen	5 50 @6 00
Ducks, young, ℔ dozen	7 50 @9 00
Geese, ℔ pair	1 75 @2 00
Goslings, ℔ pair	2 50 @3 00
Pigeons, old, ℔ dozen	1 75 @2 00
Pigeons, young	2 50 @2 75

BUTTER.

While the market has ruled favorable to buyers, there has been a very fair demand at prevailing rates. There were no very heavy accumulations of either creamery or dairy product of most desirable qualities. For some favorite marks going to special custom higher figures than quoted were realized.

Creamery, extras, ℔ lb	16 @—
Creamery, firsts	14 @—
Creamery, seconds	— @—
Dairy, select	14 @—
Dairy, firsts	13 @—
Dairy, seconds	12 @—
Dairy, soft and weedy	— @—
Mixed store	11 @—
Creamery in tubs	17 @—
Pickled Roll	17 @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

There are no large quantities offering, but the market is a little better supplied than for some weeks past and presents in consequence a slightly easier tone. There has been no decline, however, in quotable values.

California, fancy flat, new	9 @—
California, good to choice	8½@—
California, fair to good	8 @—
California Cheddar	— @—
California, "Young Americas"	9 @ 9½

EGGS.

Arrivals have shown some decrease, and with the usual active demand on account of Easter, the market has shown firmness, prices averaging a little higher than preceding week. Values continue at a narrow range, owing to very little difference in qualities.

California, select, large, white and fresh.	15 @—
California, select, irregular color & size.	14½@—
California, good to choice store	14 @—
Eastern, as to section and grading	— @—
Eastern, cold storage	— @—

VEGETABLES.

Market for most kinds of vegetables remained much the same as regards both tone and quotable values, as noted in preceding review. Onions were in the main very steadily held, with few other than Australian on the market. Asparagus was in good request, both for shipment and on local account, and prevailing values for this vegetable were well maintained. Choice Peas inclined in favor of sellers.

Asparagus, ℔ box	1 25 @2 25
Beans, String, ℔ lb	6 @ 8
Cabbage, choice garden, ℔ 100 lbs	75 @1 00
Cauliflower, ℔ dozen	50 @ —
Cucumbers, ℔ doz	75 @1 25
Egg Plant, ℔ lb	15 @ 17½
Garlic, ℔ lb	2½@ 3½
Onions, Yellow Danver, ℔ cental	2 00 @3 00
Onions, Australian, ℔ cental	3 50 @4 00
Peas, Sweet, garden, ℔ lb	2½@ 3½
Peppers, Green Chile, ℔ lb	12½@ 15
Rhubarb, ℔ box	75 @1 50
Squash Summer, ℔ box	1 25 @1 50
Squash and Pumpkin, ℔ ton	—@—
Tomatoes, ℔ crate	1 00 @1 50

POTATOES.

The tendency has been to a wider range in prices for potatoes, with market tolerably firm for strictly choice to select, but weak for common and defective stock. As is usual at this time of year, many potatoes are beginning to sprout and decay, and stock of this sort is naturally avoided by the majority of dealers and consumers. New potatoes are arriving in a small way. It will be a month or more before new will be in heavy receipt. Sweets continued plentiful and cheap.

Burbanks, River, ℔ cental	25 @ 60
Burbanks, Petaluma-Tomales, ℔ ctl.	35 @ 60
Burbanks, Salinas, ℔ cental	—@—
Burbanks, Oregon, ℔ cental	50 @1 00
Early Rose	90 @1 00
Garnet Chile, ℔ cental	90 @1 00
Peerless, ℔ cental	70 @ 85
New Potatoes, ℔ cental	1 00 @2 00
Sweet Potatoes, Yellow, ℔ cental	50 @ 65

The Fruit Market.

FRESH FRUITS.

Strawberries were in moderate receipt, but the bulk of arrivals were under choice. Common qualities moved slowly at rather low figures. Longworths sold mainly within range of 75@90c per drawer and Melindas at 35@50c. Cold storage Apples, about the only kind now offering, are being quite steadily held, but are moving slowly at the prices asked.

Apples, fancy, 4-tier box	1 75 @2 25
Apples, good to choice, ℔ 50-lb box	1 00 @1 75
Apples, common to fair, ℔ 50-lb box	—@—
Strawberries, Longworth, ℔ drawer	70 @ 80
Strawberries, Melinda, ℔ drawer	30 @ 50

DRIED FRUITS.

There is a little more doing in Prunes, both for export and on local account, and prices for the same are more regular and more steady than at any previous date the current season. All sizes are receiving a moderate share of attention. More firmness is shown on 40–50s and 100–120s, relatively, than on the other sizes. Beyond the improved tone in Prunes, the market for cured and evaporated fruits remains without appreciable change. Quotations are continued practically as last noted, but they represent in the main little other than asking rates; to effect free sales lower prices would have to be accepted. Jobbers are as a rule well stocked, and are more anxious to reduce their present holdings than to lay in further supplies. They are slow to make purchases, except at decided bargains, or of an exceptional lot needed to fill immediate orders. The business doing from second hands is mostly in small and mixed lots, whether for shipment or on local account, and the aggregate movement outward is not of heavy volume. Stocks of Figs are now light and they are hardly quotable in a wholesale way. Apple market does not appear to be quite so demoralized as lately, but values remain quotably unchanged. Peaches and Plums are in liberal stock for this late date, and of common to medium qualities of Apricots there are more offering than immediate custom can be found for at anything near full current figures.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½@ 6
Apricots, Royal, choice, in sacks, ℔ lb	6 @ 6½
Apricots, Royal, fancy	7 @ 8
Apricots, Moorpark	9 @10
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	2½@ 3½
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, choice	4 @ 4½
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, halved, fancy.	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, White and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	3½@ 4½
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	1½@ 2½
Figs, White	2½@ 3½
Peaches, unpeeled	3 @ 5
Pears, prime halves	2 @ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40–50s, 6¼c.; 50–60s, 4¼c.; 60–70s, 3¾c.; 70–80s, 3¼c.; 80–90s, 2¾c.; 90–100ss 2¼c.; 100–120s, 1½c. The selling price of Prunes for District No. 1 is ½c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

Market is without new or especially noteworthy feature. Business is of a light order, and is never active at this time of year. Values remain as before noted, with the Association in full control of existing supplies.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10½c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

While there is a glut of Oranges, the quantity of strictly choice to select is not heavy. The weakness of the market is most pronounced on low-grade fruit. Not only are many of the Oranges punky, but some are showing decay spots, making the fruit decidedly objectionable. Lemons are in liberal stock and market is favorable to buyers, especially for other than most select, the quotable range of values remaining about as last noted. Lime market was a little better supplied and not quite so firm as preceding week.

Oranges—Navel, ℔ box	50@1 75
Seedlings, ℔ box	—@—
Tangerines, ℔ half box	50@1 25
Grape Fruit, ℔ box	75@1 50
Lemons—California, select, ℔ box	1 75@2 00
California, good to choice	1 25@1 50
California, common to fair	50@1 00
Limes—Mexican, ℔ box	7 00@—
California, small box	—@—

NUTS.

Market remains practically the same as at date of last report. Almonds are in moderate supply and are offering at unchanged figures, with inquiry light. Aside from a little low-grade stock, market is bare of Walnuts. Offerings of Peanuts are of very moderate volume and values for same steady.

California Almonds, shelled	18 @22
California Almonds, paper shell, ℔ lb	12 @13
California Almonds, soft shell	9 @11
California Almonds, hard shell	6 @ 7
Walnuts, White, soft shell	—@—
Walnuts, White, California, standard	—@—
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

Market shows firmness, but with last year's wine practically all out of first hands, it is no longer quotable in a wholesale way. Quotable values for dry wines of 1900 vintage may be said to be nominally 19@22c. per gallon. A sale of two-year-old Napa wine is reported at 25c., delivered at nearest railroad station, the buyer furnishing the puncheons. The outlook for the wine growing industry is quite favorable for remunerative prices for at least several years to come. The steamer Roanoke cleared Tuesday with 169,455 gallons wine for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	63,923	4,858,304	4,832,369
Wheat, centals	93,323	6,277,582	5,216,263
Barley, centals	32,715	3,214,302	4,567,859
Oats, centals	14,975	574,091	661,303
Corn, centals	1,825	89,749	104,665
Rye, centals	1,650	107,162	91,752
Beans, sacks	618	526,363	334,535
Potatoes, sacks	19,602	1,292,153	1,017,940
Onions, sacks	1,215	151,620	138,943
Hay, tons	2,847	130,332	127,893
Wool, bales	1,575	27,270	38,919
Hops, bales	446	7,773	9,427

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	28,940	2,794,678	3,275,326
Wheat, centals	103,838	6,066,859	4,576,520
Barley, centals	10,842	1,910,603	3,652,218
Oats, centals	...	47,821	37,811
Corn, centals	517	3,168	16,233
Beans, sacks	333	11,876	22,640
Hay, bales	2,168	85 089	109,221
Wool, pounds	231,400	641,031	4,324,433
Hops, pounds	531	533,258	968,513
Honey, cases	63	1,758	3,420
Potatoes, pack's	5,826	121,572	62,234

California Dried Fruit at New York.

NEW YORK, April 3.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—A moderate movement, with no special changes in quotable rates.

Prunes, 3½@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.

"Fruit"

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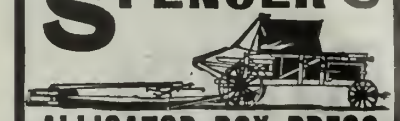

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FRUIT MARKETING.

Orange Growers' Meeting.

One hundred and fifty of the best known citrus fruit growers of southern California met last week at the Chamber of Commerce, Los Angeles, and perfected plans to secure from the railroads a transcontinental freight service for California's fast rotting orange crop. The pros and cons of the existing conditions were discussed at length and many remedies were suggested.

The speeches and the arguments were effective, and if the remedies decided upon are carried out the shippers are confident that existing conditions will soon be at an end. It was the all but unanimous opinion that the orange growers suffer more by shortage of railway motive power than from any other cause. Faster rather than cheaper service was the slogan, and a committee of five of the most representative men among them was selected and directed to enter into immediate negotiations with the railway officials.

The meeting was called to order by L. F. Story, who stated the object of the convention. George Frost of Redlands was then selected as permanent chairman. James Boyd took the floor to declare that on account of the transportation companies oranges were cooking on the deserts instead of finding good prices in New York. Story suggested that nothing was likely to be accomplished by talking—that every one knew the condition of affairs fully. He moved that a committee be appointed by the chair to draw resolutions setting forth the sentiment and desires of the growers. His motion was carried and the chair appointed the following committee: A. H. Naftzger, Seth Marshall, W. J. McIntyre, General Jennerson, C. D. Adams, H. J. Doolittle and I. L. Lyons. The committee retired and on reconvening the following resolutions were read and approved:

WHEREAS, By reason of the failure of the railroads to provide the transportation facilities, and by reason of the slower time and poorer service in transit and the condition in which the fruit has been arriving in the markets—badly decayed—enormous loss has fallen upon the growers and shippers; and

WHEREAS, By reason of the inability and failure of the railroads to provide the necessary car service it has become evident that a considerable portion of the present orange crop can never be transported to market; and

WHEREAS, The railroads have increased their passenger service, offering inducements by low rates and thus taking their engines for passenger traffic at the expense of the citrus fruit, freight service, therefore,

Resolved, That a committee of five be appointed by this convention to formulate and bring to the attention of the executive heads of the initial railroads the facts pertaining to the existing situation, and to urge upon them immediate measures for relief in the way of increased and expedited service.

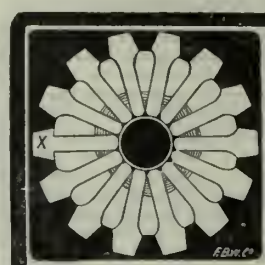
The chair appointed the following committee to confer with the railroad officials: A. H. Naftzger, James Slausson, Seth Marshall, George F. Whitcomb and E. M. Lyons, to the end that a time schedule may be arranged.

Stump Burning for Frost Prevention.

J. E. Bonebright, Moscow, Idaho, who has given smudging much thought and study, says: In order that the smoke should cover the ground the smudges should be placed from 1 to 2 rods apart, on the windward side of the spot to be protected. A good smudge can be made from a pitchy pine stump or log. In the stump vertical and horizontal auger holes are bored so that they meet each other at right angles. A little coal oil is poured into the vertical hole, and a match applied to oil and wood at the horizontal opening. The hole acts as a chimney, causing a current of air to pass upward through the stump. The stump should be 4 feet or more in height and at least 1 foot in diameter, and of a pitchy character and not too dry—horizontal hole near the ground. If large, the stump may serve for several nights. When beginning to blaze a little water should be applied, the object being to produce a smoky cloud and not to use heat from the blaze. Damp straw or manure will made a good smudge. During the season in which damaging frosts occur it is desirable to keep the stumps or straw ready for use at any time, and for this reason the stumps are to be preferred, since they are not affected by the weather.

A Hawaiian Experiment Station.

Jared Smith, who has been in charge of the offices of seed and plant introduction in the Department of Agriculture, at Washington, has been directed to start in a few days for Honolulu to establish an agricultural experiment station there. As director his first work will be to teach the Hawaiian people how to grow garden truck. Most of the vegetables now consumed in the islands are imported from San Francisco. They will be taught also the value of dairy cows among poor families, butter and cheese making, the forage plants most economically produced for Hawaiian consumption and the value of poor families raising chickens and pigs. This agricultural missionary work in the interest of the common people of the islands will be essayed before other agricultural problems will be considered. There are 200 acres, running from the coast to the top of a mountain, set apart by the Hawaiian Legislature for this purpose. These matters will be given attention near the coast, coffee raising will be studied on the higher elevations and forestry work will be done on the mountain tops.



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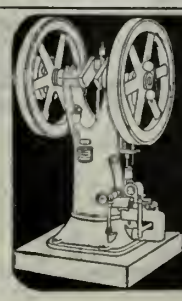

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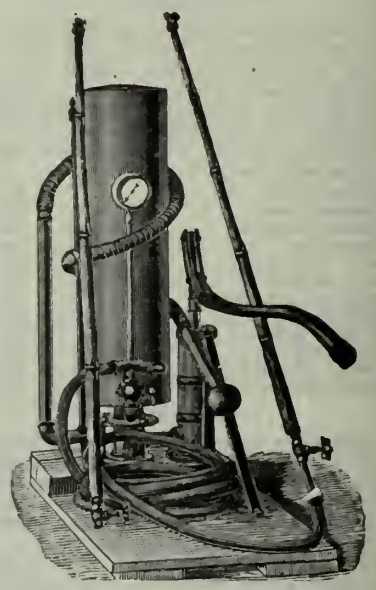

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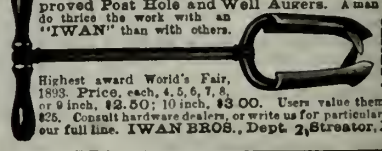

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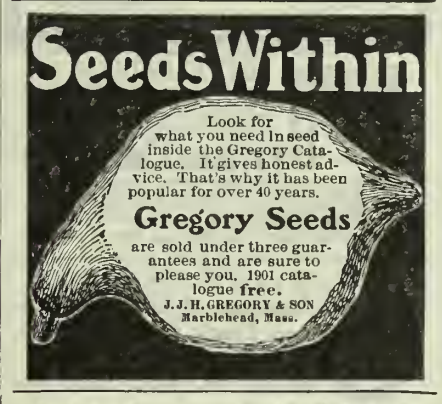

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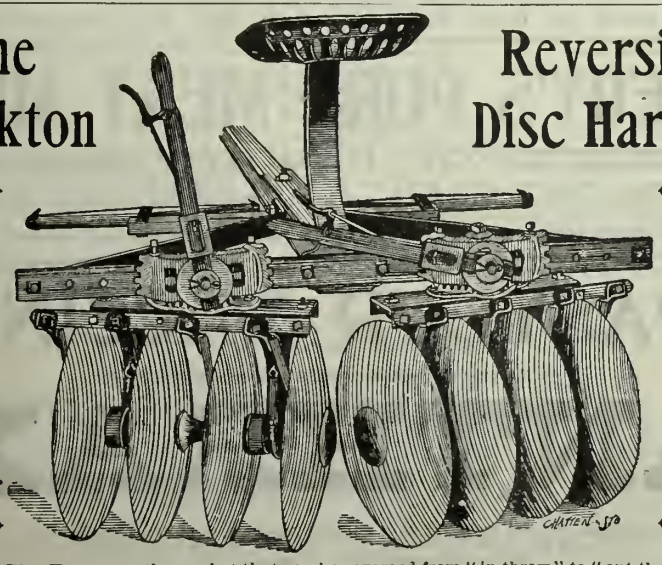

The only Disc Harrow on the market that can be reversed from "in throw" to "out throw" It can be used with extension arms, which can be adjusted to leave a space of 4 to 6 feet between the gangs. By a succession of throws of the lever either section can be completely reversed from "in throw" to "out throw."
H. C. SHAW PLOW WORKS, Stockton, Cal.

California Fruits.
NEW EDITION (3rd)
By E. J. WICKSON.
Professor Agricultural Practice University of California; Author of "California Vegetables in Garden and Field;" President California State Floral Society; Horticultural Editor Pacific Rural Press of San Francisco.
Large Octavo; 470 Pages; Profusely Illustrated, 12 Full-Page Plates.
Price $2.50, Postpaid Anywhere.
PACIFIC RURAL PRESS, Publishers,
330 Market Street, San Francisco, Cal.

THE GARDEN.

Vegetables in the Stockton Region.

J. B. Meloche, buyer for M. P. Stein & Co., recently made a trip through the Stockton region and questioned growers, including Italian vegetable gardeners, as to the prospects. He furnishes the following for publication in the Mail:

We have not had another such a prosperous season for ten years. All of the gardens are now absolutely cleaned of all varieties of vegetables usually raised here, and we are sorry we can't even furnish our old stand-by local dealers with such as they generally require during this month and a part of April.

"Just think," said one of them, "in the last two years we have thrown away ton after ton of cabbages, to say nothing of other garden truck, after offering the same at 10 to 15 cents a dozen (at least fifty pounds), but securing no buyer. But this season we have had demands for everything that we raised, and it has given us encouragement to extend the business the coming season."

"It isn't all money," said another one, "when you have to work 365 days in the year to raise such truck and then throw it away if you can't sell it. What we raise is not like wheat or beans—it will keep only so long in season. Then you must take it out of the ground and prepare to plant for the coming season, as vegetables of all kinds will only last a certain time."

There is prospect of the best red onion crop for years past, and the yield is estimated at 150 to 200 carloads. These onions are shipped all over the coast and Middle West, as they come in between the seasons of the other varieties. Asparagus and new potatoes will soon be in the market.

In speaking of the vegetable industry of San Joaquin county, there is hardly any one who is not familiar with the industry that can realize the great output every year from the near vicinity of Stockton. There are about a hundred gardeners within a radius of about 5 miles of Stockton. They rent or own (most of them rent) twenty to forty acres of land, for which they pay $1 a day for twenty acres or $2 a day for forty acres. This includes improvements, such as house, barn and other buildings, together with fruit trees and vines. The unimproved portions of the land are planted to all kinds of vegetables, and in many instances they raise two to three crops a year. As an example, red onions planted in September are ready for market in April and May. Then the ground is fertilized, plowed and planted with cabbages or other vegetables which make early fall supplies, and is again replanted in December to something else. This is why the gardeners have to work 365 days in the year, to say nothing of nights, as they have to get up at 2 or 3 o'clock in the morning to come to market.

Taking the number of gardens at a hundred and averaging twenty acres each, the total acreage is 2000, representing a yearly rental of $36,500 to the land owners, or $18.25 an acre. The above acreage will soon be increased to double the amount, as Stockton is becoming the shipping center of central California.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by their firm.

WEST & TRAUX, Wholesale Druggists, Toledo, O.
WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price 75c. per bottle. Sold by all Druggists. Testimonials free.

Hall's Family Pills are the best.

THE VETERINARIAN.

Answers by Dr. Creely.

FOR A DISEASED UDDER.

TO THE EDITOR:—Can Dr. Creely give me some information concerning my cow? She will calve in four months. The milk was so bitter and lumpy, we quit using it two weeks ago, and have since dried her up. The milk from one teat, especially, is as thick and stringy as cornstarch; but her bag does not seem to be much swollen and there is but little milk in the other teats. Is it safe to put her on fresh pasture now? Is there danger of her bag spoiling, either now or when she calves?—W. A. RICE, Saratoga.

It would be unsafe to turn her out while she is diseased. The mammary glands would more than likely spoil. Apply externally camphorated oil daily and inject into all of the teats about four tablespoonfuls of peroxide of hydrogen. A good purge is indicated. Mashes and grass would also assist to allay the existing inflammation and possible ulceration. DR. E. J. CREELY.
510 Golden Gate avenue, S. F.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.O. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: Barred Plymouth Rocks and Single-Comb White Leghorns. Write for wants. Fine roosters for sale. Eggs $1.50 per setting of 15. Incubator lots $5.00 per 100.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

FOR THOROUGHBRED FOWLS in small lots, address Cottonwood Farm, Pleasant Grove, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

BRONZE TURKEYS A SPECIALTY. Birds and eggs for sale. Send for circular. Ed. Hart, Clements, Cal.

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S. P. LINDGREN & SONS, Kingsburg, Cal. For sale, Poland-China pigs from registered stock.

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BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

THOS. WAITE, Perkins, Cal. Breeder Reg. Berkshires. Sweepstakes State Fair and Tanforan, 1900.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs.

BERKSHIRE BOARS. C. A. Stowe, Stockton, Cal.

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POULTRY supplies of all kinds. Send for my new price list and booklet, "HOW TO FEED FOWLS FOR PROFIT." CROLEY, 508 Sacramento St., San Francisco, Cal.

BLACK LEG ...VACCINE.

During the past two years our vaccines have been used on several thousand head of cattle in the worst infested districts of California and with the best of results, giving entire satisfaction and proving an exceedingly profitable investment to the stock owner.

Every lot is tested and found reliable before a single dose is put on the market.

Write for literature and testimonials.

The Cutter Analytic Laboratory,
Bacteriological Dept., FRESNO, CAL.

DO YOU WANT AN INCUBATOR?

Our birds are from the best of stock and have won highest prizes wherever shown.

OAKLAND POULTRY YARDS,
Manufacturers of
Pacific Incubator and Brooder,
1317 Castro St. Oakland, Cal.
Send for Catalogue.

JUST AS NATURAL as the old hen and a good deal more reliable. Doesn't break its eggs or make its chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched. THE PETALUMA INCUBATOR is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 54 to 324 eggs. WE PAY FREIGHT ANYWHERE in the U. S. Handsome catalog free. Petaluma Incubator Co., Box 217 Petaluma, Cal.

We are the largest manufacturers of Steel Wheels and Truck Wagons in the World. Write for Catalogue. Havana (Ill.) Metal Wheel Co.

Feeds and Feeding.

By W. A. HENRY.

This is a practical, thorough and complete work based on what has been done: a record of solid facts.

Every Feeder, Breeder or Farmer should have it for every-day reference

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Six Miles N. W. from PETALUMA, on the Petaluma and Sebastopol Road.

FRANK A. MECHAM, Prop.

Importer and Breeder of

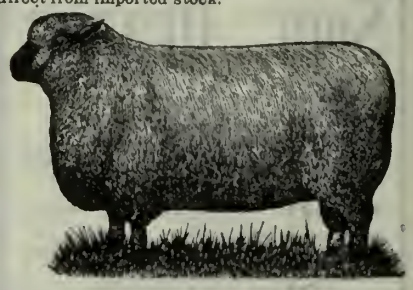
Red Polled Cattle.

Color Deep Red. Both Sexes for Sale.

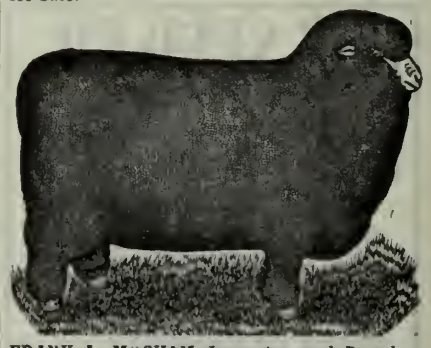
Address all communications PETALUMA, SONOMA CO., CAL.

FRANK A. MECHAM;
Importer and Breeder of Shropshire Sheep.

They were all imported from England, or bred direct from imported stock.



We have also bred American Merinos—Hornless Sheep—for 30 years. They are a large sheep, without wrinkles. Rams will produce 20 to 25 pounds of long, white wool yearly. Sheep of both sexes for sale.



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Shipping Points: PETALUMA AND SANTA ROSA, SONOMA CO., CAL.

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is still in the lead. Reports from the THREE GREAT FAIRS of the Pacific coast show that after meeting the best herds in California, Oregon and Washington, we can rightfully claim to have the Champion Herd of the coast. Look at the record: California State Fair, 15 ribbons; Oregon State Fair, 18 ribbons; San Francisco and San Mateo Fair, 20 ribbons, making a total of 53 ribbons. Our large sales to visitors to the fairs show what they thought of the stock, and we have very few salable pigs left. If you are in need of stock, write us and we will describe what we have.

SESSIONS & CO., 117 E. 23rd St., Los Angeles, Cal.

EMERY'S PURE MEAT MEAL

FOR POULTRY.

This meal is the highest grade goods on the market. We guarantee it ABSOLUTELY FREE FROM ANY DISAGREEABLE ODOR. It is PURE MEAT and costs no more than cheap tankages. Send for sample. It will surprise and please you.

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is the original and successful preventive remedy for

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Write for particulars, official endorsements and testimonials from stock raisers who have successfully used PASTEUR ANTHRAX VACCINE in the United States since 1895 and protected their stock against Anthrax.

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The undersigned has in control one of the finest deposits of Gypsum in the State, and is prepared to supply in carload lots to any part of the coast. 85% PURE.

W. S. VAN EMON, Selma, California.

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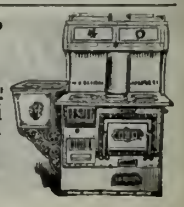
$50.00 RANGE FOR $25.00

TO INTRODUCE THE

WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.



List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR WEEK ENDING MARCH 19, 1901.

669,979.—CONVEYOR CHAIN—E. T. Bucknam, Tulare, Cal.
670,196.—GAS GENERATOR—E. R. Cook, Sacramento, Cal.
670,175.—BALING PRESS—W. H. Gray, San Leandro, Cal.
670,177.—SHINGLE MACHINE—J. D. Griffith, Point Arena, Cal.
670,232.—GATE—C. M. Hooper, Pullman, Wash.
670,390.—CAN MAKING MACHINE—M. Jensen, Astoria, Or.
670,136.—OIL CAN FAUCET—W. Laudahn, S. F.
670,180.—CAN SOLDERING MACHINE—E. Manula, Astoria, Or.
670,181. — CAN SOLDERING MACHINE FEED—E. Manula, Astoria, Or.
670,182.—CAN FILLING MACHINE—E. Manula, Astoria, Or.
670,409.—SOLE TRIMMER—E. F. Maxwell, S. F.
670,185.—MOP HEAD—J. F. McCleary, S. F.
670,005.—ROTARY ENGINE—F. H. Palmer, Elma, Wash.
670,032.—WINDOW—E. Parmentier, Vancouver, Wash.
670,376. — EXTENSION PLUG — P. H. Quinn, Pasadena, Cal.
670,391.—PRINTING PRESS FEED — R. Robinson, New Whatcom, Wash.
670,259. — GAS GENERATOR — J. Trullinger, Bakersfield, Cal.
670,070.—DISK HARROW—Willis & Porteous, Fresno, Cal.
670,071.—HARROW TOOTH FASTENER—G. T. Willis, Fresno, Cal.
670,092.—ORE CAR—G. E. Woodbury, S. F.
34,236.—DESIGN—B. P. Herndon, Florence, Ariz.
34,241.—DESIGN—A. H. Leach, Los Angeles, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

HAME HOOK.—No. 669,699. March 12, 1901. Don Jackson, Pleasant Grove, Cal. This invention consists of a two-part hook having one end bent to engage the staple or fastening by which it is connected with the hame and the other with a slot and opening at one side by which the connecting link of the chain is introduced, the two turnable about the pivot pin so as to interlock and retain the chain in place and form a solid lock and brace when closed.

BALING PRESS.—No. 670,175. March 19, 1901. Wm. H. Gray, San Leandro, Cal.

This invention is for improvements in hay presses, and it consists essentially of a door fixed to and turnable with a shaft upon one side so as to move through a projecting hopper, into which the material to be pressed is placed in successive charges. Power devices act to swing the door so as to force the charge from the hopper into the press, and when the press is sufficiently filled the door is latched, the follower is moved upward to compress the bale, and at the instant when the compression is complete the latches are disengaged and the parts restored to the position for making another bale.

CAN FILLING MACHINE.—No. 670,182. March 19, 1901. Erik Manula, Astoria, Or.

This invention is designed for filling cans with salmon and the like, and consists essentially of an intermittently revolving can feeder, a cylinder having therein a series of measures into which the fish is compressed, and means by which these measures are successively emptied into the cans. Combined therewith are telescopic tubular jaws into which the fish is fed and by which it is delivered into the measures, and a revolving knife by which the fish is cut off when the measures are filled.

CAN SOLDERING MACHINE.—No. 670,-180. March 19, 1901. Erik Manula, Astoria, Or.

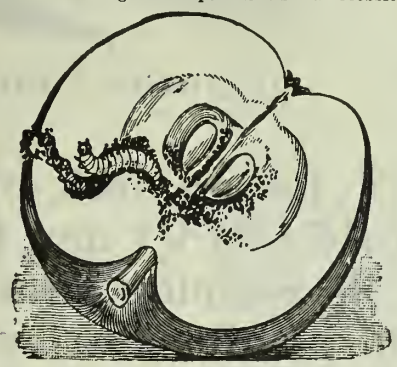
This invention relates to can soldering machines, and consists of an adjustable feed device, acid trough and solder trough in line and in different planes and adjustable with regard to each other. In conjunction with these are two spirals of different length axially in line and parallel to the two troughs, one governing the advance of the cans through the acid bath, and one the advance through the solder bath.

CAN SOLDERING MACHINE FEED DEVICE.—No. 670,181. March 19, 1901. Erik Manula, Astoria, Or.

This invention relates to an improved feed device for spirally feeding cans in a can soldering machine. It consists of a revoluble inclined support or cone upon the feed end of a spiral driver, with guiding devices by which the can is guided and given the inclination which it is to maintain after entering the acid or solder bath.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had for the asking.

Cured Quittor and Will Cure Fistula.

WATER OAK, VA., May 27, 1900.
Please give me treatment for horse with fistula just coming on. I have wonderful faith in GOMBAULT'S CAUSTIC BALSAM. I cured same horse of quittor with it. E. J. SOUX.

Cooper's Sheep Dip.

Leading Dip of the World Sixty Years.

USED ON 150,000,000 YEARLY.

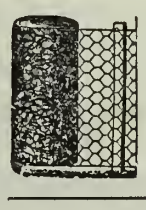
Not a refuse product of tobacco or dye factories.
A sheep dip invented and made specially for sheep.
You are asked to use it because it is the best.
It occupies a supreme position in all countries.
It is free from objections so common in others.
It cures without injury. No smell.

General Agents, SHOOBERT-BEALE CO., 222 SANSOME ST., SAN FRANCISCO.

Cocoanut Oil Cake.

THE BEST FEED FOR STOCK, CHICKENS AND PIGS.

For sale in lots to suit by
EL DORADO LINSEED OIL WORKS CO.
208 California St., San Francisco, Cal.



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for POULTRY and other purposes.

LOW PRICES.

Wire Cloth, Prune Dippers, Graders, Etc.
West Coast Wire & Iron Works, 5 Fremont St., San Francisco.

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THE NEW EGG FARM.

By H. H. STODDARD.

A practical, reliable manual upon producing eggs and poultry for market as a profitable business enterprise, either by itself or connected with other branches of agriculture. It tells all about how to feed and manage, how to breed and select, incubators and brooders, its labor-saving devices, etc. 12mo., 331 pp., 140 original illustrations, cloth. Price, $1 postpaid.

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DEAL DIRECT with the Makers.

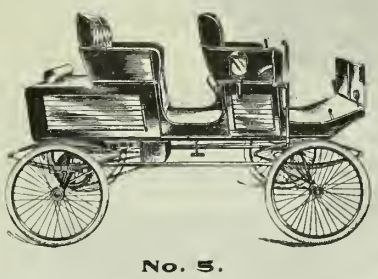
When you buy a carriage, buggy or harness. Choose from the biggest stock and fullest assortment, and pay only the cost of making, with but one moderate profit added. Our plan of selling direct from the factory insures satisfaction—your money back if you're dissatisfied with your purchase—and enables you to **save the dealer's profit.**

No. 3034 Buggy. Price $38.30 with leather quarter top.

Our complete illustrated catalogue, showing many styles of high grade vehicles, harness, robes, blankets and horse equipments, with detailed descriptions of each, mailed free. Write for it and learn how cheaply you can buy when the jobber's and dealer's profits are cut off.

THE COLUMBUS CARRIAGE AND HARNESS CO., Box 772, Columbus, O.

No. 240. Single Strap Buggy Harness. Price $7.95.



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STATIONS: 1255 Market Street, San Francisco. 103 South Broadway, Los Angeles. 106 Telegraph Avenue, Oakland.

Your choice in nine different styles. Ladies can operate them. Sold in guaranteed condition at reasonable prices. Illustrated catalogues and information will be sent on application.

ROBERT BRAND & CO.,

MANUFACTURERS OF

"MINNESOTA CHIEF" THRESHERS and SELF-FEEDERS.

MR. CHANTICLEER.—"It's no use scratching over this straw, Biddy, it was threshed by a Minnesota Chief"

A FULL LINE OF

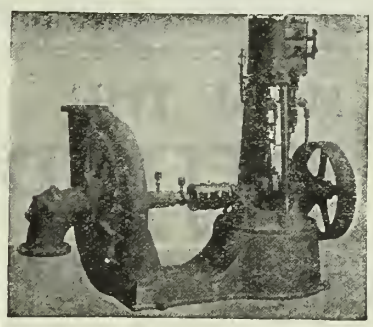
Separator, Engine and Horse Power Repairs and Extras

ALWAYS IN STOCK.

Leather and Rubber Belting.

Agents Fischer's Taper Straw-Burning Boilers and Bay City Iron Works Engines.

OFFICE, FACTORY AND SALESROOMS: 525 Third Street, Bet. Washington and Clay Sts., OAKLAND, CAL. Telephone Cedar 721.



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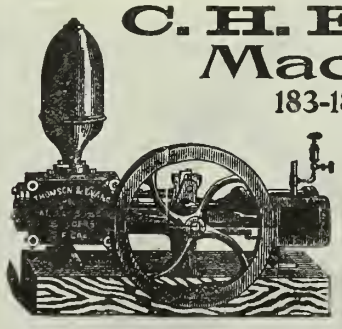
We guarantee the efficiency and durability of our pumps.

BYRON JACKSON MACHINE WORKS, - SAN FRANCISCO, CAL.



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Where, with Enlarged and Increased Facilities, they are better than ever prepared to do

First-Class Machine Work

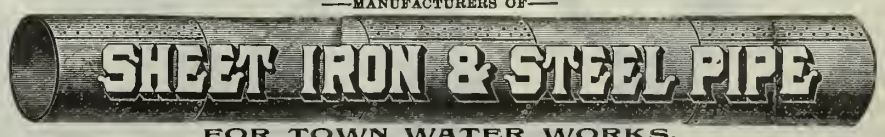
Promptly, and at Reasonable Prices, and will continue the manufacture of

Thomson & Evans Steam Pumps,

Deep Well Pumps, Power Pumps, Etc.,
Also Marine Engines, Ship and Steamboat Work, Pipe Cutting, General Jobbing and Repairing

FRANCIS, SMITH & CO.,

MANUFACTURERS OF



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Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.

83 FREMONT STREET, - - - - SAN FRANCISCO, CAL.

Iron out, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with Asphaltum.

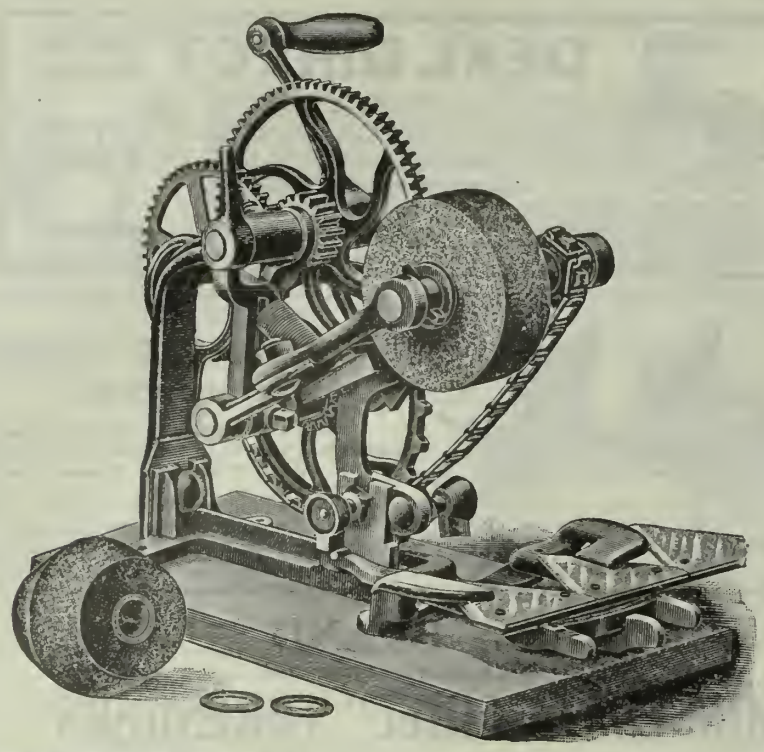
HAWKEYE STUMP PULLER...

Pulls an ordinary grub in 1½ minutes. *Pulls either standing Timber or Stumps.*

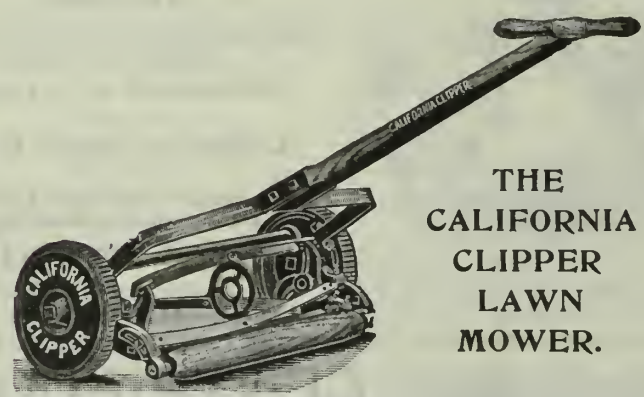
Makes a Clean Sweep of Two Acres at a Sitting.

A man, a boy and a horse can operate it. No heavy chains or rods to handle. You cannot longer afford to pay taxes on unproductive timber land. Illustrated catalogue FREE, giving prices, terms and testimonials, also full information concerning our I. X. L. Grubber, Iron Giant Grub and Stump Machine, 2-horse Hawkeye and other appliances for clearing timber land.

MILNE MFG CO., 853 8th ST. MONMOUTH, ILL. ADDRESS MILNE BROS. FOR SHETLAND PONY CATALOGUE.



THE WESTERN SICKLE AND TOOL GRINDER.



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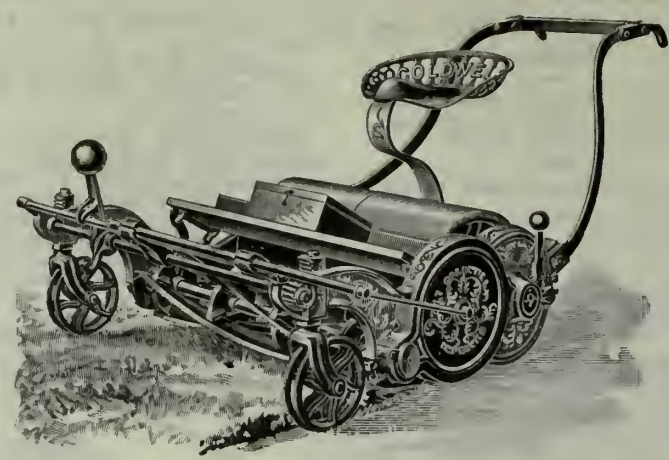

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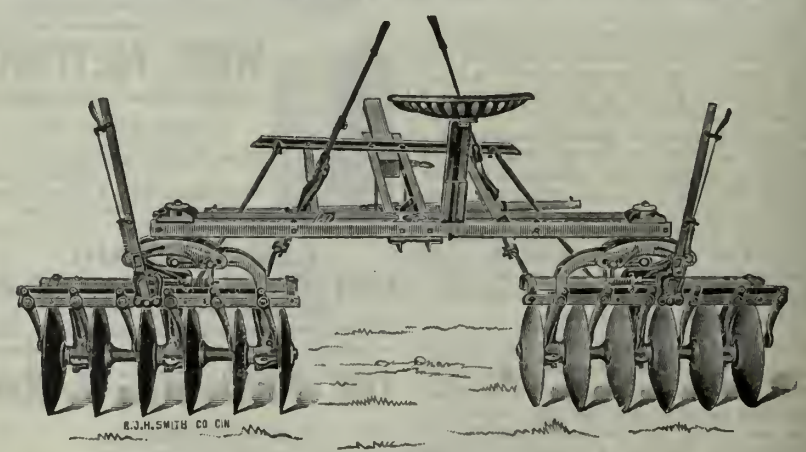

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 15. SAN FRANCISCO, SATURDAY, APRIL 13, 1901. THIRTIETH YEAR Office, 330 Market St.

Two Southern California Interiors.

We have two interesting pictures on this page which present points both of semblance and difference. They are both attractive interior scenes, but they have at first thought strikingly different motives. The first is expressive of the industrial activity and acumen of the south, the other representative of the elegant home interests which are so widely developed by the people in that part of California. If, however, one looks a little more closely into the relations of enterprise and business success to the construction and equipment of elegant homes, they all seem very properly to be closely associated. This seems very proper indeed from an American point of view—perhaps the association is more close and cordial in the United States than anywhere else in the world. Our finest house builders are our most successful industrialists; in most other parts of the world the grandest residences are inheritances from times of ancient conquest. The architects of these old fortunes sheathed their steel in the hearts of their foes and rivals and appropriated their property; the modern fortune builder buries his steel in the neck of a pig or in the fertile loam or sinks it vertically into the bowels of the earth. Naturally, then, the princely homes of the old world point to prowess, slaughter and oppression, while those of the new world are established largely upon industry. The further elaboration of this idea is respectfully referred to those who have Fourth of July orations in preparation for next summer.

A Corner in the Exhibit Room of the Los Angeles Chamber of Commerce.

But really we do reflect a truth when we associate the business activity and enterprise of southern California with the elegant homes of the same region. The interior view of the Chamber of Commerce conveys a wholesome lesson in that it reminds all readers that the development of southern California from a region of sheep ranges and dolce-far-niente ranchos into a district of the most elegant and profitable horticulture has been secured by free investment of money, hard work and tireless watchfulness and activity. The results secured by this process are precious to the southern people and they excel all other parts of the world, probably, in displaying their achievements to attract others who have money, brains and energy which can be enlisted in the same lines of wealth and home making. The Los Angeles Chamber of Commerce is one of many expressions of this disposition. The picture shows only a corner of the permanent display of products which it maintains. Although its work is for the public, it is a private corporation, possessing a membership of business and professional men of Los Angeles and southern California, ranging from 950 to 1000 in number. These contribute $1 per month toward the expense maintaining the institution.

One of the main features of the organization is to supply information and answer correspondence relative to the resources and productive features of the southern portion of the State. It also maintains a free exhibit of natural and manufactured products. This exhibit, which occupies the greater portion of the upper floor of a building on the corner of Fourth street and Broadway, specially erected for the purpose, is visited by thousands of people yearly, from all parts of the world. The average yearly registration is 165,000. In addition to maintaining this exhibit, the Chamber makes splendid displays of California products at all the great industrial fairs in the world, and thus attracts thousands to the upbuilding of the State.

Southern California homes need no encomiums to those who have seen them. Whether they be great or small, they have charms which none can forget. The picture shows one of the more elegant, built upon the old Spanish model with the living rooms surrounding a beautiful court, in which plants grow and fountains play in the gorgeous sunshine, which is thus welcomed to the very heart of the dwelling. The glass roof is a modification of the old plan which has desirable points, but it is not essential in the balmy climate.

View of the Patio of Gail Borden's Residence, Alhambra, Los Angeles County.

THE newest thing on the indescribable Turk is scale bugs. A. D. Pryal, horticultural commissioner of Alameda Co., has received a request from Jerusalem for certain insects that will eradicate the scale which is infecting the fruit trees of that country. No doubt Mr. Pryal will enter upon this up-to-date crusade in defense of the holy city with his accustomed enthusiasm.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, April 13, 1901.

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The Week.

The low temperatures have wrought all the havoc we have apprehended in recent comments. Not only has there been an abnormally low range and dry air, which has sapped the strength of plants, but the drops below the frost line have been many and grievous. We have many reports of individual fruit losses which are simply distressing. No doubt there will be a very moderate yield of some fruits, and buyers will be on the alert to catch growers on contracts favorable to their interests. We trust, however, that many of the extreme apprehensions of losses will not be realized. Very often there is more left than seems possible at the time, and prices sometimes go part way toward compensation for losses in weight. On the whole, this will probably be true this year, as formerly; but some, no doubt, will lose nearly all they hoped to secure this year. For such we can only express the most heartfelt sympathy, and exhort them to fortitude and anticipation of better times to come. The Weather Report this week faithfully sketches the doings of frost, winds and drouth.

Wheat has ruled quiet at old figures for spot offerings, and lower for futures. The only grain clearance for the week is noteworthy as being a cargo of 5700 tons of wheat for Spain, the first shipment to that country for a long time. Barley has been looking upward and is firm at the current quotations. This cereal continues to move overland at the special freight rate recently established. Oats are quiet but not quotably lower; arrivals are principally Eastern. Corn is in light stock and steadily held. Beans have developed no change since last issue. White varieties and Limas are firmly held. Pinks are offering at easy figures. In the line of millstuffs, bran is being more firmly held and rolled barley is higher, otherwise no changes. Hay is showing slightly reduced receipt, but there is still an abundance for the demand. Beef is bringing, as a rule, full current figures. Mutton is quiet at last quoted decline. Lamb is lower. Hog market remains strong under very limited receipts, all domestic. Butter market shows about same condition as last week. High-priced creamery is in most liberal stock. Choice to select dairy is most actively sought after, on account of being cheaper than creamery. Cheese is in light stock and with a fair shipping demand the past week has tended against buyers. Egg market is more quiet, but prices are without marked change; declines in values for best qualities not looked for. Poultry has averaged lower than preceding week; poor old and small young did not fare well. In citrus fruits the only changes to note are a firmer market for choice oranges and lower prices for limes. Strawberries are making a better display, both as to quantity and quality, but values are lower. Dried fruits are dull. Prunes are now offering at 2 cents for the four sizes. New ventures in prune growing are not likely at this figure. Almonds are ruling firmer, owing to very light crop in prospect. Honey market easy, but not much new has yet arrived. Potatoes are in light receipt and rather firmly held. Onions remain scarce and high. Asparagus and most other Spring vegetables lower. A little trading in wool, but not at very firm figures. Hop market is lifeless; practically none offering.

Readers of the Pacific Rural Press have had frequent warnings that dairy products were selling above the official quotations, and we have trusted to our own sources of information rather than relying upon quotations which have brought some of the city dailies into angry conflict. The present issues will work for good in the end, and it is a satisfaction to us that we have been able to forewarn our readers of dangers which have been exposed.

The Prune Association has met with a serious obstacle in a decision by Judge Seawell with reference to holding prunes under contract. President Bond says that the significance of the decision is that the present contract will not hold good unless the prunes are out of the growers' hands and into the warehouse of the Association. While it did not affect the present crop, it would have a destructive effect on next year's operations and might disrupt the Association. The contract is the same as that of the Raisin Growers' Association, and it will affect that organization, which now has a similar suit pending. The Prune Association will appeal the case immediately and an effort made to obtain a decision before the June meeting of the Association. A reversal of the decision is expected. Thirty carloads of prunes were sold during the week past—mostly for the domestic trade. The movement is not brisk, but is better than for some time.

Wine affairs are still ascendant. What the effect upon the price of grapes will be, with the frost on top of the sharp demand, remains to be seen. There will be nothing small about it. It is reported that southern California wines and brandies are practically under the control of three Los Angeles firms, as it is impossible to buy in large quantities from anybody else. As a result, the prices of these products are from 30% to 50% higher than they were two years ago. It is impossible at this time to buy two-year-old sweet wines for less than 42½ cents a gallon, while two years ago wine of the same age wholesaled in large quantities at 30 cents. Brandies in bond are worth 85 cents a gallon. Two years ago they could be secured for 50 cents. All these things are very interesting to grape planters.

One of our readers who has lost his fruit by frost writes us that he will have to come down to a peanut basis this year, and asks us to tell him how to grow peanuts. This we will undertake to do next week, for it may be of advantage to many. In this connection it may be of advantage to know that there will be no holdover of peanuts. It was telegraphed from New York the other day that a firm in Hoboken, N. J., has cornered the peanut market, having purchased all the nuts in the Chicago, Boston and New York markets, as well as having secured this week 125 carloads from Norfolk, Va. There has been an advance in price from 70 cents to 90 cents a bushel lately. We suppose the southern peanut growers will also be alert to increase their acreage in view of the above facts, and still it is encouraging to know that the country will be short on peanuts. It may be of some advantage to our growers.

A distressing death is that of Dr. John A. Myers, which occurred in this city last week. Dr. Myers was at one time director of the West Virginia Experiment Station and achieved an excellent reputation for his station work. For the last two years he has acted as propagandist for nitrate of soda interests, and he has pushed this business very intelligently and conscientiously. In this work he came to California a few weeks ago and contracted typhoid fever, which ended his life. Though in a strange country, he was warmly befriended and cared for, both by local business associates and by personal friends, and his bereaved wife arrived from the East before his departure. His death seems the more distressing because he was in the prime of a life which was being uprightly and usefully employed. Many of our readers who have met him will hear with deep regret of his death.

The newly elected board of directors of the California Raisin Growers' Association organized with M. T. Kearney, president; S. F. Biddle of Hanford, vice-president; Hector Burness, treasurer; Percy E. Goode, secretary; Robert Root (former secretary), grading inspector.

Gov. Gage's approval of the appropriation by the recent Legislature of $45,000 to pay the indebtedness of the State Agricultural Society was wise and commendable. This will relieve the society from the limitation of a burdensome indebtedness and enable it to use its every resource for the purpose for which it was created. We have recently expressed our approval of the recent activities of the State Society, and we are glad it is out from under the handicap. We should have a great State Fair this year.

We have not been alone in frost injuries on this coast. This week's reports from various parts of Mexico state that unusually heavy and late frosts have caused great damage to grain crops all over the republic. Wheat has suffered most. Fruit orchards on the west coast have been slightly damaged and the orange crop will be cut down considerably.

Fruit movement is an active topic. The Santa Fe says it could stop the movement by ocean and the northern railways "in a minute were we so inclined. The initial lines have the routing of all this business, and we could decline to turn the business over to the ocean carrier at Redondo, if destined to any point reached by rail, if we saw fit. We are allowing the growers to do as they please in this matter, however, for we are confident that oranges can never move in large quantities via the Sound route." This is real kind of them, especially as they are sure the northern route will not work. We will see about that later; it may all be true. Meantime the car lines declare they are equipping themselves against any future car famines. The Armour Company has just completed the construction of 700 new refrigerator cars for the transportation of California fruit to the Eastern markets. This makes a total of over 4000 cars in the California fruit service in addition to the 1600 cars recently acquired from the Continental Fruit Express. Even if the ocean route does fail, it has served a good purpose. It shows that growers are awake and that railways cannot afford to sleep.

Alexander Craw, quarantine officer of the State Board of Horticulture, maintains his diligent watchfulness and has recently had the satisfaction of barring entrance to two grievous pests which have thus far been excluded from our orchards. A few days ago he destroyed two cases of prune and cherry trees that arrived from Japan infested with a new scale insect, a species of Parlatoria. Mr. Craw was also vigilant enough to seize upon two baskets of Mexican oranges infested with "Mexican orange maggots," Trypeta ludens. These were burned in the steamer's furnace. The fruit grower must feel safer to know that such important exclusions are continually being made. Mr. Craw is a most efficient officer.

Those who periodically advance the proposition of perfumery farming in California and soon afterwards encounter the local difficulties thereof should know that the general proposition of perfumery on a horticultural basis is becoming more difficult everywhere. German manufacture of chemical perfumes yielded exports to a value in 1900 of $2,618,000, against $2,451,400 in 1899 and $2,046,800 in 1898. The large increase in the exports of perfumeries dates from 1895. They have met with favor in England, in British Africa, and in India. Holland, Russia, Austria-Hungary, Turkey, Egypt, China, Chile and Australia consume German perfumery. The chemical odors and the artificial ethereal oils of German manufacture have greatly injured the French flower-field industry, as the prices for the artificial odors are much less than those of the natural ones.

QUERIES AND REPLIES.

Cassava, Artichokes and Pork.

To THE EDITOR:—I have read Bulletin No. 44, U. S. Department of Agriculture, Division of Chemistry, 1894, relating to sweet cassava (Manihot aipi), grown in Florida. If you think conditions of soil and climate on the island land in the delta of the San Joaquin are adapted to its growth and maturity, I would like to get some cuttings and try it this season in a small way on a piece of land I have on one of the islands. Can you tell me where I must look for cuttings, if you think it worth while to attempt to grow it here? If Jerusalem artichokes were planted in the moist reclaimed land, do you think they could ever be eradicated if it were desired? I am studying about engaging in pork raising on the island land. What are the obstacles you see in the way of success in that line if a large number of hogs are to be grown on one farm?—ROACHER, Stockton.

Cassava has not succeeded in California thus far, though several trials have been made. It enjoys neither the dry heat nor the cool night temperature which are also unfavorable to sugar cane and rice. We doubt if any cassava cuttings can be had in this State, as those who have had the plant reported that it had died out. Material for further trial will have to be brought from the Gulf States, unless there are instances of success which have not come to our knowledge.

There seems to be no difficulty about getting rid of Jerusalem artichokes. They have a way of petering out of themselves; and if they do not go fast enough, dry plowing in the heat of summer will hasten their departure. As for pork feed, we doubt if any of these strange roots and tubers can compare with alfalfa or other clovers, where they thrive, supplemented by barley, Indian or Kafir corn.

The dangers in large hog enterprises are two—first, disease, the prevention of which we do not yet fully understand, and which is too often very quick and destructive; second, the drop in prices just as soon as our local product reaches a certain amount. At present we could clearly grow more hogs profitably; but local packing and outlets are small, and, just as soon as the production reaches greater volume than can be used in connection with the large amounts brought from the East, the prices drop. Still, if we can learn to grow healthy hogs at minimum cost, we ought to be able to compete with the East with our better climate and the freight cost in our favor.

Liquid Manure---Grafting Machine.

To THE EDITOR:—Can you tell me how many shovelfuls of chicken manure should be put in fifty gallons of water? Would three hours be long enough in solution before using? I want to use the liquor for young trees and vines. Would three gallons of this be about right per tree? Can you tell me, also, where the Trabuc grafting machine can be had?—Jos. C. BEAUDRY, Mayhews.

It is pretty difficult to make a definite prescription in this line owing to the exceedingly variable composition of chicken manure. It is an old gardener's rule to use a quarter of a pound of Peruvian guano to four gallons of water for plants in open ground, and about half that strength for plants in pots. As one pound of the best guano is about equal to six pounds of the best chicken manure in a dry condition, a fair theoretical formula would be a pound and a half of chicken manure to four gallons of water, or about thirty-three pounds to fifty gallons. But the best guano has its ingredients in a more soluble condition than they are in chicken manure, and to get a liquid of anything like equal strength more chicken manure should be used. We doubt if a pound to the gallon of water would be excessive. Much longer soaking than you mention is desirable. A day's soaking, with occasional stirring, would be a minimum. The old practice with liquid manure is to provide for long preparation in advance of use. The amount per tree or vine depends upon the age and size thereof. The application should be made over a considerable area around the plant, and not in one place. Three gallons thus distributed around a young tree might be a good quantity, while the whole fifty gallons would not be too much for a good-sized bearing tree, as this would only equal two and one-half tons of chicken manure to the acre, which would not be excessive. We see no advantage in making liquid manure except in garden practice. Too much labor is involved to make it economical in orchard or vineyard practice. Chicken manure applied thinly over the whole surface of the ground and plowed in is a better proposition.

The Trabuc grafting machine is made in France. Probably Mr. Felix Gillet of Nevada City could put you in the way to procure it.

Tarragon and Sorrel.

To THE EDITOR:—Will you please tell about growing tarragon; also, please describe the kind of sorrel which is said to grow wild everywhere in America and is used for salads and greens and otherwise cooked? It is said that it is far better than spinach. —I. I. C., Petaluma.

These are both old plants of regular standing in European gardening and culinary operations. They are less known in this country, and in California are probably grown only in the gardens of citizens of foreign birth who retain their liking for them. We do not at this moment find the seed in such California seed catalogues as we have at hand, but probably any of our leading dealers could get the seed for you from Eastern correspondents.

Tarragon is a hardy perennial, the leaves and young shoots of which are used for salads, soups, pickles, etc. It is grown from this seed or from pieces of the root, of which eye or bud will make a plant. It is very easy to grow and easy to keep, and, possibly, not easy to get rid of, owing to the manner of growth.

So far as we know, the common sorrels which grow wild in the humid climates of America do not occur in the same way here. The canaigre is used as a pot herb to some extent in parts of the State where it is abundant. The other rumexes choose to grow more freely in the summer, and in our dry air get very tough. The common red sorrel of run-out pastures makes so little foliage that it is hardly available. Of the kinds freely used as vegetables in Europe and the Eastern States, the common sorrel is Rumex acetosa; the French sorrel, the one most largely grown for culinary use, is Rumex scutatus. It is different in appearance from other sorrels, which have spear-shaped leaves, in its broad foliage. It is the only kind grown around Paris. This is the kind you are likely to get from seedsmen. It is very easy to get started from seed, and when once established the plants are good for several years.

Lima Beans.

To THE EDITOR:—Do you think the Lima bean would grow and do well in the eastern part of Stanislaus county? Where is the Lima bean mostly raised? Do you think it would do well in this soil and climate if it had irrigation? My soil is sandy loam. How many pounds per acre would an average crop produce?—READER, La Grange.

Although the Lima bean is grown in gardens all over the State by proper arrangements of soil and moisture conditions, it is grown as a field crop only in the coast regions of Santa Barbara and Ventura counties. In those places there is a deep loam soil and equable heat and moisture conditions assured by the ocean fogs and breezes. In the hotter, drier parts of the same counties the plant does not succeed, though but a few miles distant, and it is not advisable to choose this bean for a crop in any interior region of high heat and dry air, even though irrigation is employed. In Ventura county the average crop is about a ton of clean beans to the acre—sometimes 50% more is secured, sometimes the crop is almost a failure through lack of moisture. The region now devoted to Limas is all that the traffic will bear, if the season is favorable, and a full crop always brings a sharp fall in prices. Experiments in other localities should be made with caution and on a small scale. A full account of this crop is given in "California Vegetables."

Asparagus Prices.

To THE EDITOR:—Having been a reader of your paper some eighteen years, I venture to ask you the following question: What has been the average price of asparagus during March, April, May and June for the last three years? I wish this in order to have an idea as to the advisability of enlarging my asparagus plantings.—F. A. STILES, Easton.

On the first of March asparagus is selling by the pound and within three years has varied from 7½ cents to 25 cents per pound on that date. Before the end of March the price falls to 3 cents, and then to a box rate, which amounts to about 2 cents to 3 cents per pound net. In April the range has been from 1½ cents to 3 cents per pound, and this holds without much change through May. June prices are lower—the box prices sometimes to 1 cent per pound for the contents. Obviously the way to grow asparagus is to get it in as early as possible. It can be profitably grown at a low price only by those who are on the best lands adjacent to canneries and who get large crops and have minimum delivery cost. From Fresno asparagus can manifestly be profitably shipped to San Francisco only in the opening of the season, for the handicap of the freight, as compared with the slight cost of running it in by boat from the rivers or from around the bay, would be insurmountable.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 8, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Unfavorable weather conditions during the week have seriously impaired crop prospects in nearly all parts of the valley. Temperature considerably below normal and dry northerly winds have been detrimental to grain and hay, and severe frosts have injured early vegetables, deciduous fruits and grapes. The extent of the damage to fruit cannot be estimated at present, but reports show that there will be a heavy loss on grapes, apricots, peaches, prunes and almonds in many places, aud that figs, walnuts and early pears have been considerably injured. Light showers in some sections have been beneficial. Grain is in good condition in most places, but needs rain. Green feed is becoming scarce.

COAST AND BAY SECTIONS.

Cold weather has prevailed during the week, and severe frosts have occurred in many places. Light rain has fallen in nearly all sections, improving the condition of grain and hay. Fruit in the central and northern counties appears to have been more seriously injured by frosts than in the southern coast counties, where it is reported the damage is very light. In Alameda, Sonoma, Napa and San Mateo counties grapes and deciduous fruits have been considerably damaged, but the extent of the loss cannot yet be estimated. Some of the large orchards were protected by smudging, as timely warnings had been given. Grain and hay are in good condition, but needing rain in the southern counties.

SAN JOAQUIN VALLEY.

Generally clear and cold weather has prevailed during the past week, with frequent frosts, which in some localities have greatly damaged vines and apricots and caused some damage to peaches. The general impression is that the frosts have not caused as much damage as was at first anticipated. Light showers fell quite generally on Saturday, but in most sections were not of material benefit. Rain is badly needed in all parts of the valley. Early-sown grain is in excellent condition, but late sown, especially on sandy soil, is suffering for rain. Present prospects are favorable for a good fruit crop. Alfalfa looks well, and green feed is still plentiful in most districts. North winds prevailed the greater portion of the week. The ground in most places is too hard to work.

SOUTHERN CALIFORNIA.

The temperature has been below normal during the week, and frosts have occurred in some places, slightly injuring apricots and early potatoes. The light showers were very beneficial to hay and grain, but more rain is needed for late-sown wheat and hay. Apricots are dropping, and the yield will be light in some sections. Other deciduous fruits and walnuts are advancing rapidly and looking well. Wheat and barley have commenced heading out. Volunteer grain is being cut for hay.

LOS ANGELES SUMMARY.—Cold week with frost. Damage reported in some localities; none in others. Morning of the 8th the coldest day on record at Los Angeles, with heavy to killing frost on low grounds.

EUREKA SUMMARY.—Gardens are backward on account of continued cold weather and high north winds. Heavy frosts, but no material damage reported. Grass is good, and the fruit outlook excellent.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 10, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	1.82	44.49	45 03	38 22	34	62
Red Bluff	.46	22.67	20.08	23 44	30	74
Sa ramento	.02	17 50	15 92	17.72	36	72
San Francisco	.05	18 99	17.47	20 45	42	72
Fresno	.04	10 38	7.36	7.99	34	72
Independence	.00	5.80	2.81	4 46	28	60
San Luis Obispo	.06	27.88	15.10	16.02	36	70
Los Angeles	.06	14 17	5.71	15 88	36	72
San Diego	.01	10 55	3.41	8 84	46	62
Yuma	T	3.60	.79	2.80	38	76

HORTICULTURE.

Listen to the Voice of the Tree.

To the Editor:—On the first page of your issue of March 2nd, 1901, appears an illustrated editorial which should be read and studied by every person interested in any or all of the various products of the soil. That every tree and plant possesses an intelligent power of mute appeal for help from the hands of man—an appeal readily understood by the close and intelligent observer—is a fact long since noted by the writer. When your orcharding is unsatisfactory, your trees unproductive, or, if productive, fruit inferior in quality, you must study the silent language of the tree and learn its wants, for surely something is wanting and the tree is trying to have you understand what it is. It gives an unmistakable sign when it shows you that it cannot gratify your wishes either in the quantity or quality of its product. By this means the tree places the key in your hand, and you have but to unlock its secret and give it the keep it is asking for, and its smiling abundance will be your reward.

I will give a case in point, wherein an accident revealed the hidden language of the tree: Near the town of Mt. View stands an orchard of Royal apricot trees, fifteen years old, which have failed to show any blossoms for two years. Last year the owner had fifty of these trees grafted over to another variety, believing that Royals were done for there, notwithstanding the fact that they had borne fairly good crops always before these last two years. Now, in grafting last year it happened that the grafter left one large limb standing on each tree, to "draw sap," as he said. Now, behold! This spring those limbs that were left standing were richly loaded with blossoms, while the remaining ungrafted part of the orchard is entirely and completely without bloom. What was the language of these trees, thus interpreted? "Relieve us of some of this wood. It takes all our energy to support all this wood. We cannot do this and give you fruit." These trees had been begging for assistance for several years, but were not understood until the simple accident related astonished their owner.

Spring Pruning.—On the same page is an illustrated article on late spring pruning, and at the risk of incurring your displeasure by too long a letter I will give briefly my experience in that line, and why now I always prune peach trees late in the spring. About ten years ago I had charge of a peach orchard, which I pruned each year in the fall. It was never fully a success, much of the fruit dropping before maturity, and what remained on the trees was not up to standard. I saw something was wrong and began to study "tree language." The tree wants something. What is it? Now, it struck me that the fruit of these trees was not properly fertilized. They needed all their blossoms to fertilize thoroughly each other in order to make perfect fruit. The next season I waited until the trees had about gone out of bloom and gave them a thorough pruning, and that year's peaches were the finest I ever saw; and I have followed the same rule ever since with peaches only, and the results have been most satisfactory.

To be successful, study carefully the silent speech of the tree and hasten with assistance to its appeals, and it will bless you with a rich and bountiful return in golden fruit. A. Kamp.

Mt. View.

Notes on Grafting.

J. W. Mills, foreman of the University sub-station at Pomona, gives the California Cultivator some conclusions from his experience with grafting. Although it is too late for grafting in most places, except perhaps in the mountain valleys, the notes will do to keep for future use. If scions are cut and kept dormant, grafting may be done after growth has started out on the stock.

Preparation for Grafting.—It is better to cut off all the main limbs at the time of grafting and make the whole tree over at once. Small brush low down should be left to shade the body of the tree and give leaf surface till the growth of the tree takes its place. This is not essential, but has advantages. Small side limbs should be left when possible for reasons stated above, and to prevent the scions from being knocked out by accidents that are always liable to occur. After the scions begin a vigorous growth, the small limbs and suckers should be removed so as to throw all the growth into the new top. It is well to whitewash the trees clear up into the branches. All deciduous trees are benefited by this treatment.

Limbs that are to be grafted and are 2 inches or more in diameter should have from two to four scions inserted equidistant from each other. After one or two season's growth they should be thinned out, leaving the strongest. By this time the stumps are capped with new wood and the smaller wounds made by the removal of the useless limbs soon heal over. We have plum and pear trees grafted over when the limbs were 3 inches in diameter. When treated in the way just described they show no scars, simply a ring showing a change in the different kinds of bark. Wax and strips of cloth should always be put over the scion at the points of union with the stump. All saw cuts should be waxed.

Saw Grafting.—Any method of grafting is successful when it is quickly done and the inside barks of scions and stock match. If the bark slips well, inserting a wedge-shaped scion at the top between the bark and wood is a good way. Splitting the stumps of large limbs for cleft grafting is not desirable. Either bark grafting as described above or saw grafting is better. The latter is done by sawing across the corner and well down on the side of the limb. Trim out the saw cut with a sharp knife. Place the knife blade nearly parallel with the edge of the cut; press the blade with the thumb and a smooth cut is made with one movement. Make the incision wider at the top so that the scion can be placed firmly in position from the top.

This method gives better results than the usual cleft graft in large limbs; there is not so much pressure placed on the scion and no cavities are left in the heart of the limb.

Apricot Budding.—Apricot trees over five years old should not be grafted. The wood is hard and does not make a good union. If it is desirable to change bearing trees into some other variety, cut the tops off as soon as the crop is picked in July. Remove the limbs so as to retain the symmetry of the tree. Sprouts will soon come out all over the limbs; when they get to be 6 or 8 inches long, thin them out to two or three to each stump. As soon as the sprouts are as large as lead pencils, which will be about the latter part of September, bud them to any variety desired. Early the following spring cut the sprouts off about an inch above the dormant bud. Before the following fall comes the tree will have large tops that will require some pruning. These new tops will not blow off as they do when grafts are inserted in the stumps of large limbs.

ARBORICULTURE.

Good Avenue Trees for California.

From an Address by A. Campbell Johnston of Garvanza.

The Acacias.—Among the many beautiful families of trees suitable for avenue planting none possess so many good qualities as the acacia. Its delicate fragrant blossoms do so much to beautify our gardens in early spring. The selection of Acacia melanoxylon to represent this attractive family was singularly unfortunate; this tree blooms late, with dirty white flowers, is an inhabitant of moist canyons and though, like many trees, promises well for the first few years, when grown up, if deprived of irrigation, dies away. Much to be preferred as a neat moderate-sized avenue tree is Acacia pycnantha. When planted out in the ground it grows as fast as a eucalyptus and has beautiful golden-yellow fragrant blossoms coming in early spring. It stands drought and abuse remarkably well. Acacia Baileyana, a new introduction, is very beautiful and a rapid grower. Its blooms are great favorites in the florists' shops in Australia.

For country roads, where trees are often neglected, we can recommend Acacia mollissima and Acacia normallis. The first with bluish foliage, the second yellow, both flowering freely in March and April. A few years ago, when the white scale was prevalent, thousands of these trees were destroyed; the black scale seems, however, not to affect them. Acacia falcata is much used in the south of France; also, some of the forms of Acacia longifolia, a very valuable species, with long yellow catkins. Acacia elata is recommended from Australia. There are probably twenty kinds well worthy of trial for avenue trees and at least 100 species which ought to find a way into gardens, and would give a succession of blooms for at least ten months in the year. The specimen tree of Acacia koa in the botannical garden in the Elysian Park is very ornamental and seems to stand drought. As yet it has not flowered. This is one of the few timber trees from Hawaii.

Eucalypts.—The next important family are the eucalypts; few of these are well suited for street planting in cities. Of those thoroughly tested are Eucalyptus polyanthema, blooming in winter, with long pendant blossoms recalling mignonette.

Eucalyptus calophylla and Eucalyptus ficifolia are fall bloomers, and E. sideroxylon var. pallida, with beautiful crimson, blooms from January to April, and has a weeping silvery foliage. Individual specimens of E. corymbosa in full bloom make a sight not easily forgotten, and may prove useful for avenues. Many others, such as E. cornuta, E. diversicolor, E. capettalata and E. leucoxylon, are well suited for country roads. E. microcorys is highly recommended in Australia, and, from the description and habit of growth, is one of the few kinds worthy of a place on the lawn as a specimen tree.

How unfortunate the selection of E. cornynocalyx (the sugar gum) has been for avenue planting can be well demonstrated by taking the Seventh street car line in Los Angeles. This street was planted about five years ago, and the ragged, straggling habit of this tree is well demonstrated, the only successful trees being a few specimens of E. cornuta mixed with them. We are again courting failure by planting E. robusta. It is a swamp tree, and when grown up is straggling and brittle and quite unsuited for avenue purposes. This tree, when young, promises so much and is such a failure when grown up.

A proper test of this and other eucalypts in our parks for avenue purposes would have saved thousands of dollars to the people of Los Angeles. The narrow-leafed type, E. amygdalina, planted occasionally on sidewalks at Redlands, is well worthy a place in this list. I think, however, E. Andreana, the species that supplies most of the cut flowers for the London and Paris markets, and E. mellidora, also a winter bloomer, promise well.

Other Trees.—Very nearly allied to the eucalypts are the Angophora intermedia and Tristania conferta, both very beautiful and much used as avenue trees in Australia, especially around Sydney. They make an umbrageous tree and are very attractive in bloom; Syncarpia laurifolia (the turpentine tree) is also well recommended, but requires good soil.

Sterculia diversifolia, more commonly known as brachychiton, has been planted around Pasadena and has proved very satisfactory. It does not afford much shade, but its shining bright leaves shed the dust in summer, and it has pretty bell-shaped flowers in fall and winter. It is, perhaps, our best tree for planting alternately with other trees of a somewhat more umbrageous character. Jacaranda mimosœfolia (now Jovalifolia), from Brazil, is common here, but not planted sufficiently. When bearing its pretty blue flowers it is especially attractive. Our camphor tree has pretty light-green leaves, and the young foliage in spring has a red tint, which gives variety. These two trees can only be planted in localities free from frost, and require irrigation and some care. Grevillea robusta, when well cut back, remains one of our best avenue trees. The rubber tree (ficus) affords some very ornamental trees, which, however, from their robust root growth, are not to be recommended where there are cement sidewalks.

Among those trees of especial promise are Calodendron capense (beautiful tree) from the Cape, with beautiful white blooms, much used for avenues in its native country. Melaleca leucaendron is of rapid growth and eventually makes a beautiful tree, with attractive white flowers.

Several others of the strong-growing melaleucas and callistemons are well worth a trial. These trees, however, are affected by severe frost.

Palms.—Among the palms, Cocos plumosa has been much planted around Santa Barbara. Probably more satisfactory for general planting is the palm generally known as Chamærops excelsa, of neat and rather rapid growth. Both the date and fan palms are, with few exceptions, too untidy and of too spreading habit to be included in this list. The Dracœna (now Cordyline), especially the broad-leafed type, known as Australis, is useful for general planting, giving quite a tropical aspect to the landscape.

Oaks on the Sacramento Valley Plains.

Mr. J. W. Snowball of Knights Landing, in the course of a letter to the Woodland Mail, makes these interesting points and suggestions: When I first settled on this place the river bank for about one-fourth of a mile was a literal thicket of brush, wild rose bushes, grape vines, willows, with a few sycamore and stunted oak trees. About the year 1860 I went over my place to find a few oak poles to make corral bars, and, after working half a day going all over 100 acres of ground, I found just two sticks large enough for corral bars. To-day, after having cleared out the brush and giving the oaks a chance on this same land of not over fifty to sixty acres, there is standing to-day at least 500 cords of oak wood. Many of the trees could make over a cord to the tree, and had the timber been thinned out the trees would have been much larger and thriftier. An oak tree takes 20 feet square of land to perfect its growth, and the reason—and the only one—the few groves of young oaks one sees near the creek in this county do not make a more rapid growth is simply because they cannot develop, for you will find as many as ten, and even twenty, trees on each 20 square feet of land in many places.

I find the oak tree will grow from the acorn readily. Just plant the acorn all around your fields about 10 feet apart; give the young trees half a chance the first five years, and after that they will take care of themselves.

Thirty years ago, where Woodland stands, the land was covered with fine, large, thrifty oak timber, but the demand for firewood soon cleared the land of its noble oak trees, and none were planted to replace those cut down. The land is becoming almost treeless. My experience is that an acorn planted will produce an oak tree in as quick, if not quicker, time than the common California walnut planted at the same time will produce, and especially will this be the case when we get the facilities for winter irrigation in operation, for there is no tree that responds so quickly to irrigation as the oak tree of Yolo county.

I have found on the river in seasons of overflow, when the young oaks are surrounded with water in the winter season, the following summer they made a wonderful growth of wood. I take it, therefore, that nothing could accomplish such beneficial results, both as producing fuel, beautifying the farms and the public roads, and adding to the annual rainfall of the valley as a general planting of forest trees, not forgetting in your selection of varieties the somewhat despised but wonderfully useful California oak tree.

THE GARDEN.

The Potato Blight and Its Treatment.

We have answered several queries about the potato disease or blight during the last few months, and we know otherwise that the trouble is not as widely understood as it should be and that great losses can be averted by proper treatment.

Mr. David A. Brodie of the Pyallup branch of the Washington Experiment Station has prepared a bulletin giving a popular sketch of the disease, and the results attained in a set of experiments with it, which we can draw from in outlining the facts which seem to us most important.

THE DISEASE IN WASHINGTON.—Mr. Brodie alludes to the very general occurrence of potato blight in western Washington and the damage caused by it during the past two years, not only in preventing the proper growth and development of the tubers, but in causing them to rot during the winter, or rendering them unfit for planting in the spring. So far as known to the writer very little has been done toward preventing its ravages in the State.

NATURE OF THE DISEASE.—Potato blight is a general term applied to certain fungus diseases which attack the leaves, stems and, in some cases, the tubers of the potato. At least two of these diseases are found on potatoes here, but the late blight caused by the fungus Phytophthora infestans is by far the most destructive. It is to this disease that the following experiments apply, although the same treatment is effective in the so-called early blight.

Many fungi produce two kinds of spores, commonly known as summer and winter spores. The summer spores are capable of germinating at once and serve to spread the fungus rapidly during the summer. The winter spores lie dormant during the winter and germinate in the spring, their function being to tide the plant over an unfavorable period. In the potato blight only the summer spores are known to occur. These are formed in great abundance on the potato leaves and make fresh inroads on the surrounding tissues of the same leaf or are carried by the rain to other leaves of the same plant or blown by the wind to healthy leaves of other plants. So the disease spreads, especially in moist warm weather.

Toward the end of the season the mycelium grows downward through the stems of the plant into the tubers, where it remains over winter. As soon as the potato begins to grow in the spring the mycelium of the fungus grows up through the tissues and matures the first summer spores of the season.

PRINCIPLES OF SPRAYING.—As most fungi live within the tissues of the host plant, and only the spores are exposed, it is readily seen that the treatment of the main body of the fungus is practically impossible, as whatever would penetrate so far as to injure the fungus must at the same time injure the host plant. Consequently we look to the spore stage to find a vulnerable place to attack it, as the spore is the only part of most fungi that ever appears outside the epidermis.

It has been demonstrated many times that spores of fungi will not germinate in the presence of certain chemicals, such as copper salts, and on account of its cheapness as well as its effectiveness, copper sulphate (bluestone) is used most extensively.

Some plants are so tender and sensitive that the pure bluestone cannot be used without injury, and for that reason the Bordeaux mixture, a combination of bluestone and lime, is used. The lime neutralizes the copper sulphate and renders it perfectly harmless to most plants, without destroying its usefulness as a fungicide. It also possesses the quality of being very adhesive. By coating the leaf with a thin film of the Bordeaux before the fungus has had a chance to gain a foothold, any spores that may be carried to it come in contact with the copper, which prevents its germinating.

PLAN OF THE EXPERIMENT.—With a view of testing the value of the Bordeaux mixture on potato blight, a plat 4x18 rods was selected on sandy bottom land which had been in cultivation for many years. All the rows were exactly four rods long, and ran crosswise of the plat.

Slight indications of the blight began to appear about July 1st, and on July 3d every alternate three rows were sprayed with the Bordeaux mixture. The disease continued to spread over the untreated portions until July 17th, when the field was again sprayed as follows:

Two rows in each plat already sprayed were treated again, and the third row was left to try the effect of one treatment when applied early. The middle row in each of the plats not sprayed July 3d was also sprayed at this time to try the effect of one treatment when applied after the blight had advanced considerably. Thus in every six rows throughout the field were two rows not treated, two rows treated twice and two treated once, one early and the other two weeks after the disease appeared.

It may be stated here that the result of the single treatment was very much in favor of the early application, but in neither case was the effect as well marked as where two applications were made. The average increase in the yield of marketable potatoes in the twelve sprayed rows over that of the unsprayed rows is nearly 37%.

WHEN TO SPRAY.—So much depends upon the weather conditions for the development of the potato blight that no set time can be given for its appearance. Last year it appeared about the 1st of July, and the year before somewhat later. When it first appears, small mildewy spots appear on the under side of the leaves; then dead, brown spots appear. When once started the disease spreads very rapidly, and has been known to spread over an entire field in one or two days. Soon the leaves and stems are reduced to a decaying mass which emits a very disagreeable odor. From this it is plain that as soon as the disease is developed no time should be lost in going to work.

Undoubtedly the best plan would be to spray once quite early, say about the middle of June, in order to be sure of heading off the disease. This should be repeated every two weeks to insure success, as a great deal depends on keeping the plants safely guarded against the attacks of the spores.

In most cases two applications would suffice, but three are recommended. In any case, the first application must be done before the disease gets a foothold, so that the spores cannot find a favorable place to grow.

HOW TO MAKE BORDEAUX.—Dissolve four pounds of copper sulphate in twenty-five gallons of water in a wooden vessel. In a separate vessel put six pounds of quicklime and add water slowly until it is completely slaked, then dilute to twenty-five gallons and stir thoroughly. The bluestone solution and the mixture of lime and water should then be poured together slowly into a third vessel; it is then ready to be strained into the spray barrel. In order to get the best results the mixture should be used the same day it is made.

To dissolve the bluestone, it is best done by suspending it in the water in a coarse sack or something of the kind for about three or four hours or over night. The reason for this is that as the bluestone dissolves it sinks to the bottom, so by keeping the undissolved material near the surface it dissolves faster than it would in the more nearly saturated solution at the bottom.

THE FIELD.

Hints on Hay Making.

Haying is at hand, and before the rush comes it may be helpful to some readers to know what experienced California hay growers think of the ways of doing it. P. G. Carter of Monrovia, Los Angeles county, writes to the California Cultivator, after many years' experience, both at the East and in California. He believes he has acquired the ability of obtaining a much larger yield from the same acreage and of much better quality, and, at the same time, at a much lower expense from the time the seed is sown until the hay is baled and in store, than are common. He confines his remarks exclusively to the manipulation of the product from the time the mowers are first started until the hay is properly cured, baled and in store. Although these remarks especially refer to barley, wheat and oat hay, more commonly grown in southern California, still, with certain modifications, they are equally applicable to any other kinds of hay.

CUTTING.—In the first place, all varieties of hay should be cut as soon as possible after the seed of the plant is in the milk and while the plant is still green, so that when cut and cured it will still retain a green appearance. In case of exceptional dry weather, it is better to cut the hay before it loses its green color, regardless of the seed of the plant, since it is the hay rather than the grain in the hay that is most to be desired. It should be borne in mind that the moment the stalk is separated from the root by the sickle every particle of nutriment, if properly cured and cared for, will remain in the stock as food, whether it be in form of the seed or the stalk, and that the green and palatable condition of the hay is paramount to all other considerations.

CURING.—Since, as stated above, it is the stalk of the plant that is to be mainly considered, the moment it is severed from the parent root the next thing to be considered is to properly cure the stalk so as to retain all its natural juices and sweetness. The quicker this is done and with the least exposure to the elements, the better will be the quality of the hay.

Therefore, the next all-important thing to be done after the green stalk is separated from the root is to rake into winrows as soon as it is sufficiently dried, so as to take no harm from being raked. In most cases where the crop is not heavy or quite green and the sun is hot, this can be done very soon after mowing. Thus the color and sweetness of the plant will be protected from exposure to heavy dews of the succeeding nights.

Within a few hours—dependent upon the condition of the weather and especially of the hay—the winrows should be bunched with a two-horse rake and left in this condition for another twenty-four hours for further curing in the bunches. The bunches should then be inverted—turned bottom side up—in the same way as bunched, by a two-horse rake. In this condition it should be left for another day's hot sun. It should then, or as soon as possible, be hauled together into large stacks for the sweating process, preparatory to baling. Much economy should and can be used in this stacking process. The hauling should be done with a large four-horse hay gatherer, or "go-devil," by which 50 to 100 tons can be hauled to the stack in a day. Another labor-saving implement for pitching onto the stack is used, being operated by two men and one or two horses. In all of this work in the hay field everything is done by horse power operated by the drivers of the teams.

In this, as in all other branches of husbandry, strict economy should be observed, not only in labor saving, but in the saving of hay. While the stacking is in progress, cross-raking close behind the stacker should follow, in which process every pound of scattered hay should be raked clear up to the hay haulers and by them carried to the stack with the other hay. It will be observed that by this systematic process not a moment of time is lost in unnecessary work—individual manual labor or the raking of scatterings. The final cross-raking takes everything clean and all is done and in the stack within four to five days from cutting, with no unnecessary exposure to the weather.

BAD PRACTICE.—We wish here to remark that we have witnessed with regret here in southern California, on a certain large hay ranch, an absolute waste in needless labor and in hay ruined by exposure to weather in cocks for a period of many months, an amount equivalent to 50% of the entire crop of a hay ranch of more than 3000 acres. The aggregate of such a useless loss, the result of mismanagement, others can estimate as well as myself.

BALING AND STORING.—The next thing to be done, and which should be done as soon as the hay in the stack has gone through the process of sweating, which will be, ordinarily, within ten days, is the baling and storing of the hay. If done promptly and in the way indicated above, the hay will go to the storerooms in bales as green as tea. The baling should be done ordinarily by a separate or distinct set of workmen, whose exclusive business is baling, and who should follow close on the stackers or as soon as the hay has gone through the sweating process.

We wish further to remark that, if possible, employ only men who have had experience in handling mowing machines, or, at least, men who have a mechanical turn of mind and are cabable of fully understanding the mechanism of a good mowing machine, and can understand the importance of keeping the machine in perfect order by closely observing the working of all its parts, keeping it properly oiled, etc. Also, such men as have a liking for and a kindly disposition toward a good team who will at all hazards feed and care for them properly. It is an easy job for a careless or reckless driver to cut and slash his team until he has ruined both machine and team.

Hints to Hay Makers.

F. A. Somers, President of the S. F. Hay Association, gives the hay growers a rattling as follows: During the past year or two handlers of hay in this city have not only been greatly annoyed but have suffered material loss by reason of the careless methods of hay balers in permitting rocks, dirt, etc., to be baled with their hay. The question has of late become so serious that the Associated Hay Dealers have determined to put a stop to it, no matter what the cost may be.

The negligence can in most cases be clearly laid at the doors of the contract hay balers, who bale for the different farmers at so much per ton; but, admitting all this, the farmer is just as responsible to the purchaser of his hay as though he had baled it himself. Anyone buying hay is entitled to clean hay or else to a reduction for dirt, etc., and it is the purpose of the Association to not only urge the farmer to see that his hay is properly baled, but to seek redress from those who are careless in the matter, and to this end a resolution was unanimously adopted at a recent meeting of the Association to trace back dirty hay to the raiser thereof and to deduct from his proceeds all allowances made on account of dirt, etc., in his hay. It is safe to say that when a sample car proves dirty, the balance of the lot will not sell on this market.

We wish to urge upon you the necessity of action in this matter, not only with the balers, but also as to the method of handling your crop when the season is such that the soil is unslacked and much loose dirt would naturally be raked in with the hay, unless

proper precautions are taken, for there must be no more dirty hay.

This circular is issued in a most friendly spirit for the ultimate benefit of both farmers and handlers; but the time for dirty has passed, and our rule to deduct will be rigidly enforced.

Practical Farming.

By J. R. L. HARDIN at the Pope Valley Farmers' Institute.

A farmer's existance depends upon his ability to succeed under existing conditions. Every farmer is the competitor of every other the world over.

It is necessary that we alter our methods as conditions change. We have to practice more economy to-day than twenty years ago. In many directions scientific methods are now essential to success, and, in the near future, our practical farmers will require a thorough knowledge of chemistry and botany.

By economy I mean "a system of management of all the means by which property may be saved or accummulated." Under this system come the equipment and productions of the farm.

As to equipment we cannot prepare too well to meet all contingencies, but our work stock, farming implements, seed, cattle, hogs and sheep must be second to none. We should have home surroundings comfortable and convenient—the water supply pure and in abundance, stables, buildings and fences substantial, and everything in proper order.

We should confine ourselves to the production of such commodities as are in demand at profitable prices, and use every effort to produce articles acceptable to the consumers.

Getting our products to market is one of our largest items of expense and is a justification for agitating good smooth roads with easy grades and direct routes. This is one of the things in which we have been inexcusably lax and extravagant. Our grades could and should be one-third to one-half less steep. This would not only allow us more profit for our usual produce but enable us to develop new resources.

Most, if not all, manufacturing, transportation and institutions are organized to secure economical management, prevent competition and control profits more thoroughly than the farmers, owing to their diversified interests, can reasonably hope to become.

Time, money, advertising, even a high tax rate judiciously expended in developing new enterprises, bringing in more people and new capital, bettering our home markets and social conditions, thereby redounding to our benefit is practical economy.

Agriculture is the basis, the foundation and the parent of all industries, employing more people than any other, with more diversified interests, and therefore harder to control but absolutely impossible to suppress.

All occupations have their prosperous and depressed periods. I believe depressions are usually brought by real or apparent surplus or overproduction.

There are always some farm products for which there is profitable demand, and the most practical farmers are those who anticipate and supply that demand.

Hints on Fertilization.

By A. A. Beyersdorf, at the Pope Valley Farmers' Institute.

In order that a plant may grow, certain elements must be present in the soil, namely—nitrogen, potash and phosphoric acid. A deficiency in any one of these elements causes starvation of the plant. If the soil is continually cropped without returning any one of these elements sterility will soon result. Therefore if sterility is to be avoided the fertility of the soil must be kept up by some fertilizer.

Fertilizers are divided into three principal classes: Barnyard manure, green manure, and commercial fertilizers.

Barnyard manure is the best and most important fertilizer to renovate the soil. Its composition depends greatly on the kind of food and management. A great deal may depend upon the kind of food fed, but it is the good management that counts after all. The manure may be ever so rich, if left to leach and ferment, it will soon be worthless except for humus.

Barnyard manure should be carefully preserved in order to obtain the best results. Loss of value results from two chief causes—leaching and fermenting. To prevent this loss is the problem to solve. Leaching may be prevented by putting it under cover; fermentation by using the proper absorbents and preservatives such as kainit, superphosphate and gypsum.

Manure should be applied to the soil often and in as fresh a state as possible. It is a mistake that manure should be rotted or fermented before being applied. Rotting reduces the value three-fourths. The fermentation should occur in the soil, thereby changing many of the insoluble minerals, thus adapting them for assimilation by the plant.

After barnyard manure comes the green manures. The best plants for manuring are the legumes such as clover, vetches, lupines, beans and peas. The reason that the legumes are so powerful is that they have the power to assimilate the nitrogen from the air. In order to do this a certain bacteria must live on the roots of the legume and through the leaves of the plants the bacteria draws from the air this most expensive fertilizer—nitrogen.

The next time you see a bunch of clover, pull it up and examine the roots closely, and you will notice white little balls—tubercles on the roots. In these tubercles live the bacteria.

If non-leguminous plants, wheat, oats, rye, barley, corn or buckwheat, were plowed under the soil would only be richer in a mass of decaying vegetable matter-humus, while the legume would add the nitrogen assimilated from the air.

The most expensive, quick acting fertilizer is the commercial fertilizer which is in different forms, consisting of nitrogen, potash and phosphoric acid. The nitrates or nitrogen costs from 15 cents to 20 cents per pound. Its effects are in given depth of color and rankness of growth. Potash is sold in the form of paint, sulphate, muriate and chlorate and costs from 4 cents to 5 cents per pound. Its effect is mainly in producing the flavoring sweetness and quality of fruit and seeds.

Phosphoric acid is sold in the form of phosphate and costs from 2 cents to 6 cents per pound. Its effect is in the foundation of flowers and fruit.

As may be seen the farm has many ways of fertilizing the soil. The classes of fertilizers rank as follows: First, barnyard manure which adds to the soil three necessary elements and humus; second, green manuring with legumes which adds the nitrogen assimilated from the air; last, commercial fertilizers which are minerals containing any one of the necessary elements.

The problem for the farmer to solve is to sell as little of the fertility as possible from the farm. Three dollars worth of the fertility of the soil is sold with every $10 of hay or grain sold from the farm. Fifty cents worth of fertility is sold with every $10 worth of horse; of the cow, 40 cents; of the hog, 30 cents; and of the sheep, 20 cents of $10 worth. The small loss of fertility through live stock accounts a great deal for its profitableness.

Summing it up in a few words, would say: First, save your manure and raise more live stock. Second, grow legumes for feeding purposes and sell less hay and grain. Third, enrich the soil as much as possible, thus making it produce at its maximum.

THE DAIRY.

Ranch Butter Creamery Style.

The importance of producing on the farms butter of highest excellence, fit to compete in the open market with the creamery product, seems to be generally disregarded, or, if not so, considered too difficult of attainment. This is largely true through lack of knowledge of details essential to success. The subject is most intelligently treated by Prof. Otis, of the Kansas Agricultural College in the new biennial report of Secretary F. D. Coburn of the Kansas Board of Agriculture. Extracts from Prof. Otis' discussion follow:

ESSENTIAL POINTS.—In the matter of making butter, the private dairyman can learn a great deal from his creamery brother. The latter has made the subject of butter-making a life study, and many of the things that he has discovered can be applied to advantage on the farm. It is assumed that the milk and cream will receive the best of care previous to reaching the cream vat.

High flavor or quick aroma of butter is due to the breaking up of the milk sugar, forming lactic acid, and is possibly the result of a series of germs that get into the cream during the process of ripening (souring). If cream is churned while sweet considerable butter will be lost in the buttermilk, and the butter will lack flavor, no matter what the cows are fed. If cream ripens too much we will get sour butter, or what Professor McKay calls "rotten egg flavor." Cream ready to churn has a smooth, granular appearance, with a rather sharp, acid taste. When cream reaches this condition, it should be either churned at once or cooled down to about 50° F., and warmed to 58° or 60° when churned. So important is the right amount of acid that our best butter makers have what is called an acid test for determining the amount.

STARTERS.—To hasten the ripening, or to get the right kind of lactic-acid germs, starters are sometimes used to advantage. These may consist either of buttermilk, sour skim-milk, or especially prepared commercial starters. Starters on the farm can doubtless be best procured by using milk or skim-milk. Select a good healthy cow, put her milk into a well-scalded can, and keep at a temperature of 85° to 90° until it becomes clabbered. Then use about one part of starter to nine parts of cream. The cream may be kept at a temperature anywhere from 60° to 75° F., if care be taken to cool it down as soon as the right kind of lactic acid is developed.

COLOR.—If the local market calls for colored butter, the coloring matter should be put into the cream as soon as the latter enters the churn. The ideal color for butter is that produced naturally under June conditions, where the cows have an abundance of fresh green grass. At no time of the year should we attempt to give butter any higher color than this.

CHURNING.—Cream should be churned at as low a temperature as possible and have the butter come in from one-half to one hour. Warm cream and rapid churning mean a large quantity of butter lost in the buttermilk, as well as soft butter, which is very hard to handle after it comes. The churn should be stopped when the butter is in a granular condition, about one-twelfth of an inch in diameter. If churned more than this it will be impossible to get the butter evenly washed and salted without spoiling the grain. When a piece of good butter is broken, it should have the appearance of broken cast iron, and not the salvy, greasy-looking article that we often see at the store. When the butter granules have reached the right size the buttermilk should be drained off, and the butter thoroughly washed with pure, clean water, at a temperature of 50° to 60° F. This should be continued until the water coming from the butter ceases to have a milky appearance.

SALT.—The quantity of salt should be varied according to the demands of the market; usually an ounce to the pound is sufficient. This salt should be of the finest and best quality and thoroughly incorporated into the butter granules, and usually after slight working the butter should be allowed to stand several hours, in order that the salt may become dissolved and thoroughly distributed. While the light and dark spots in butter known as mottles are sometimes caused by an uneven distribution of moisture, it is much more generally caused by an uneven distribution of salt. Work the butter just as little as possible. The only object of working is to distribute the salt and compact the butter. When the salt is brought in contact with the butter in the granular condition, the necessity of working is reduced to a minimum.

For private dairying in Kansas there is probably no better package than the pound print wrapped in parchment paper. It is well to have a brand engraved in the print which will leave its impress upon every pound of good butter sold, but never send any poor butter under this brand, as it would be liable to spoil one's reputation. All butter prints and butter packages should present a neat, clean appearance, and never be allowed to be smeared with particles of butter or stained with imprints of dirty fingers.

The form of roll for California would be the creamery square, but all that is said above about the stamp, style and cleanliness are as true here as in Kansas.

Price of Prunes Reduced.

At San Jose on the 9th the directors of the California Cured Fruit Association passed a resolution as follows:

Resolved, That the Association price of prunes now on hand be fixed at a 2-cent basis for a period of fifteen days from April 9th, to apply to all sizes and to include 90-100, and without differentials.

ONE may generally count upon a practical working efficiency of 80% in a hydraulic motor, i. e., the power communicated to the pump is 80% of the water power expended. This is only true when the head is measured close to the wheel. When, as is sometimes the case, the head appertinent to the water power represents the descent from the pond or canal to smooth water below the wheel, not more than 75% can be practically assumed. A loss of as much as 12% may be expected in pumping, and ordinarily as much as 5% in transmission through the pipes. An efficiency of 80% may be assumed in the motors through which the water acts to drive machines. Thus, the percentage of gross power which can be imparted to machinery at a distance of a mile or more from the source is not more than $0.75 \times 0.88 \times 0.95 \times 0.80 = 0.50$.

DISTILLATE is freely and frequently used in gas engines, it having a gravity of from 35° to 56°. The lower grades are sometimes dirty and have a tendency to foul the engine; but, if before the engine is shut down the distillate is turned off, and gasoline turned on for a few minutes, the engine is cleaned and that trouble obviated. It is cheaper than gasoline, goes further but necessitates that the engine be run with very hot air; and, rightly used, is generally satisfactory.

A BARREL of California petroleum of average quality will furnish 10 gallons kerosene worth 15 cents per gallon, 5 gallons benzine worth 16 cents per gallon, 5 gallons gasoline worth 17 cents per gallon, 10 gallons lubricating oil worth 16 cents per gallon and 50 cents worth asphaltum—a total of $5.25 from a barrel of crude oil worth for fuel purposes much less. In the separation and refining of these products lies much of the value and profit of the oil industry.

THE circumference of a circle multiplied by 0.282 equals the side of a square of the same area; the contents of a round tank can thus be compared to that of a square tank. A round tank 4½ feet diameter holds 103.03 U. S. gallons for each foot in depth; one 11 feet diameter holds 710.6977 gallons for each foot in depth. A gallon of distilled water at 39° F. weighs 10 pounds; a gallon of pure alcohol, 7.9 pounds; benzine, 8.5.

THE limit of distance to which the sound of the voice can be distinctly conveyed in a straight pipe is about 1700 feet.

Agricultural Review.

ALAMEDA.

THE HORTICULTURAL OUTLOOK. — Niles Herald, April 5: From Horticultural Commissioner Wm. Barry's report to the Supervisors Monday the following is gleaned: It is almost too early in the season to predict what the fruit crop of this district will be. Almonds are almost a total failure. Apricots blossomed full, but have not set well—too many twigs on the trees have no fruit, and those having it show the fruit in bunches which have to be thinned out, leaving anything but a uniform crop on the tree. Compared with last year, I do not think we will have more than half a crop. Cherries, peaches, prunes and plums have blossomed full, but it will be two or three weeks before we can tell what the crop will be. The movement of nursery stock this season has been enormous. The amount of fruit and ornamental stock handled at this station to date is 950,616. The number of Eastern infested trees destroyed on account of peach root borers was 3970.

BUTTE.

FINE OUTLOOK FOR FRUIT CROP.—Chico Record: All the orchard trees of Butte county are thickly set with fruit, and, unless there should be a killing frost, nearly all varieties will need much thinning. Especially is this true of the peach crop. When the peach trees were in blossom they were a mass of bloom, and a great majority of the blossoms were of fruit buds. Some of the almonds have fallen to a considerable extent, but on nearly all of the orchards there are sufficient buds for a full crop.

INDICATIONS OF LARGE CROPS.—Oroville Register: T. B. Hutchins of Gridley, speaking of the fruit outlook, says there has been little damage done to the fruit by frost. In some spots fruit has been injured along the east side of Feather river, but near Central House and on the west side in the Rio Bonito section, where some of the finest and largest orchards in the county occur, the damage has been very slight. Almonds would this year, he thought, be a light crop, but he did not think frost was the cause of it. He said he had never seen a better outlook in Butte than there was this year for large crops of grain, hay and fruit.

FRUIT RANCH TO BE SACRIFICED.—Biggs Argus, April 5: It is authentically reported that the magnificent fruit ranch of J. H. Leggett, near Oroville, has been leased to W. P. Hammon and others for the purpose of dredger mining. This ranch of about 160 acres lies in the center of the little valley along the Feather river, just below Oroville, which is being torn up by mammoth mining machines in the search for gold. The farm has long been known as one of the most productive in the county, it being planted to vines and fruit. In many ways it has been pointed out as the model fruit ranch of the northern part of the State, and one of the places first visited by visitors to Oroville. Mr. Leggett has said that the place has paid him the last few years from $15,000 to $20,000, and it is constantly growing more valuable. The terms of the lease are for thirty years, Leggett to have half of the proceeds, and the parties mining the ground agree to place the land back in the same condition as they find it—that is, the rock and gravel on the bottom and the soil and light material on top. This will permit the planting of trees and vines again. It remains, of course, to be seen whether this can be done successfully, for the land that has already been worked over by dredgers in that vicinity is apparently a barren, rocky waste.

CALAVERAS.

WILD HOGS TURNED TO PROFIT.—Calaveras Prospect: Several years ago Henry Sullivan, who lives on Bear mountain, purchased some hogs, one of which soon after escaped, and, though often seen, eluded all efforts at capture. It was known to the dwellers of the mountain as "Tom" and had grown to immense proportions and sported a pair of tusks that were a terror to dogs and men. For eleven years this hog had roamed the mountains, being joined by others that were also in a wild state. Recently Sullivan concluded it was time to convert the hogs into pork, and consequently he prepared a trap that in due time proved effective. The result of the catch was old "Tom" and several others ranging from two to five years of age. The hogs readily took on fat and recently they passed into the butcher's hands. Good judges estimate the weight of old "Tom" as 500 pounds, and one of the others is about equal in weight.

ORANGE.

BIG EGG-LAYING RECORD OF PLYMOUTH ROCKS.—Santa Ana Blade: The wife of the postmaster at Newlands has ten Plymouth Rock hens that weigh 6½ pounds each, and one rooster 9½ pounds. In March last the hens laid 240 eggs. On April 1 four of them were sitting on thirteen eggs each. On that day the other six laid five eggs; on the 2nd they laid six eggs; on the 3rd they laid eight eggs that weighed twenty-four ounces. A number of the eggs were double yolk.

SAN BERNARDINO.

FINE CROP PROSPECTS.—San Bernardino Sun: W. C. Mott and O. D. Wilhite of Riverside are engaged in budding orange trees throughout this valley and report active work in this line over the whole district. They also state that the fields of grain are looking fine so far, with not the least injury from lack of rain. The grain stands very heavy and tall, they say, and even an occasional shower the remainder of the season will be sufficient to make a most excellent yield. Another good crop will be honey. The bees have been kept busy, the supply of food for them has been abundant, and the hee keepers expect a most bounteous harvest at the close of the season.

SANTA CLARA.

FROST HURTS FRUIT.—A San Jose dispatch says: The cold north rain and the frosty mornings of the past week have slightly affected the fruit crop, particularly the apricots. In the Los Gatos section the yield will be light; in other parts of the county from fair to heavy. The consensus of opinion among the orchardists is that the cold snap will not do any material damage, the dropping of fruit buds simply doing away with the necessity of later thinning. Generally speaking, the outlook for fruit in the valley this season was never more promising.

FRUIT PROSPECTS AROUND RUCKER.—San Jose Herald, April 5: The prospects in the vicinity of Rucker for an immense fruit crop of all kinds except apricots were never so good before as the present year. Prune, peach and cherry trees are loaded, and there will also be a light crop of apricots.

PRUNE TREE PLANTING ON DECREASE.—San Jose Mercury: Beginning with 1895, according to the Assessor's figures, there were in this county 1,542,024 bearing French prune trees, 1,419,020 non-bearing, 37,305 other prunes bearing and 8257 non-bearing. In 1896 the figures had increased to 1,613,067 bearing, 1,449,022 non-bearing French prunes and 38,110 bearing and 7945 non-bearing of all other kinds. In 1897 there were 2,313,065 bearing and 908,750 non-bearing French prunes and 39,015 bearing and 7025 non-bearing of other prunes. In 1898 the bearing French prune trees were 2,327,065 and non-bearing 905,100, while the bearing prune trees of other kinds were 38,910 and non bearing 7225 in number. In 1899 there was a large increase in the number of bearing French prune trees over the previous year, but a large decrease in the number of trees not bearing. The figures are: Bearing, 2,675,320; non-bearing, 600,820; other prunes bearing, 43,280; non-bearing, 4420. The same condition is shown by the figures for 1900. The bearing French prunes last year were 2,975,180, non-bearing 425,140; other prunes, bearing 45,075, non-bearing 4200.

SOLANO.

ALMONDS DROPPING.—Dixon Tribune: The almonds at Tremont are true to their natural failing and are dropping again. No ono knows at this time how much of a crop there will be, but it is certain that the crop will not be a full one. It is said that in some orchards where irrigation was practiced last year the dropping is going on just the same. It is reported, however, that where the trees were irrigated last year in July the dropping is not so bad. We cannot account for this in any way beyond the fact that trees require moisturo the most during the height of tho growing season, when the tree is doing its utmost to mature a crop.

GUINEA HEN A FRIEND OF ORCHARDISTS.—Vacaville Reporter: The advantage of something in an orchard to destroy bugs and worms is appreciated by Joseph Bassford, who for years has kept guinea hens running about his trees and vines. He says they are excellent for that purpose and he prefers their shrill cries rather than the depredations of the bugs and worms they destroy. According to all reports, the guinea hens do a great deal of valuable work as destroyers of pests, and it might be that their general use in orchaads would be found valuable.

AFTER GOPHER BOUNTIES.—A Napa Junction correspondent of the Vallejo Times says: Solano's 10-cent bounty on gopher scalps has caused a vigorous war to be waged against these pests. The orchards and beet fields in Suisun valley are alive with these rodents, and some of the men employed on these places have quit work and gone to trapping. As high as fifty gophers have been trapped or killed in one day, and some of the land owners offer board and lodging free to the the trappers.

SONOMA.

FIVE HUNDRED CHICKENS ROASTED.—Petaluma Courier: Some time ago a newcomer named George arrived here and, renting a small place, embarked in the chicken-raising business. He was doing fairly well, until Wednesday evening his brooder house caught fire from a coal oil lamp and was destroyed, together with 500 young chicks.

STANISLAUS.

INJURED BY A HARROW TOOTH.—Modesto Herald: Albert Carmichael was caught in a single-row harrow, following a plow, on the Garner ranch, recently, and one of the teeth penetrated deep into the instep of his right foot. Four stitches were necessary in dressing the wound. The young man was thrown to the ground, hence his escape from more serious injury was very fortunate. Had the harrow been of the regulation many-rowed description, severe if not mortal injury would have been inevitable.

EFFECTS OF IRRIGATION. — Modesto News: An investigation of the amount of alfalfa seed sold to land owners in this county during the present season has been made and the result is astonishing. From the grocers and hardware stores in this city it is learned that the total amount sold to date is 98.251 pounds. The seed all comes from Utah and the price is about 10 cents per pound; the total cost is therefore $9725. Allowing twenty pounds of seed to the acre, the amount sold was ample to seed 5000 acres. In some instances only fifteen pounds to the acre have been sown, and the average is, therefore, probably something over 5000 acres. The above amount of seed was sold in Modesto alone. Ceres and Turlock also have sold some seed, and possibly some has been shipped from outside the county to private parties. Nearly all, if not all, of the seed planted has been in the Turlock irrigation district, where water is now on the land. The season for planting alfalfa will last a few weeks longer, so the aggregate will be much larger than quoted above before the season closes. By comparison with former years' sales, the amount is fully fifty times greater than ever before sold in this portion of the county. The above is all due to irrigation.

SUTTER.

HARVEST THE MUSTARD SEED.—Sutter Farmer: On some of the farms along the river in this county the wild mustard is now showing very thick, and if allowed to mature and fall to the ground or blow into other fields will cause it to spread that much more. Where it is the thickest, if the owners of the land would harvest it when ripe they would prevent its spread and at the same time get a good price for the seed in the market. A few years of this treatment would materially lessen the acreage of this objectionable plant in wheat fields.

TULARE.

FRUIT PROSPECTS GOOD. — Visalia Times: Prunes have not heen damaged by the frost and, although peaches and prunus simoni have been touched to some extent, the trees will yield big crops unless a later frost damages them.

FAT CATTLE IN ABUNDANCE.—Visalia Times: The country along the line of the Valley Road from Corcoran Junction to Kern river is covered with cattle as far as the eye can reach on either side of the road, and good feed is found even on the 12-mile desert south of Corcoran, where it has been said that horned toads and jack rabbits could not live. The cattle have the appearance, as seen from the car window, of being rolling fat.

THE FRUIT CROP PROMISES WELL.—Tulare County Times, April 4: There were light frosts for several mornings last week and there was some apprehension that the fruit crop was injured. George Birkenhauer says there has been no damage to anything except apricots, and of these there are plenty left. The peaches and prunes are unhurt. George Osborne, superintendent of the Visalia Fruit & Land Co., says the apricots have been thinned out and the fruit on the lower limbs of the Phillips cling peaches are damaged to some extent, but beyond this everything else is in first-class shape. The prunes are all right. S. A. Hogan, superintendent of the Evansdale, says there has been no damage to any of the fruit on that ranch. He made a careful examination.

PUMPING FOR WHEAT.—Tulare Register, April 5: L. A. Pratt is engaged in loading the engine, formerly in use at the local electric works, for shipment to Tipton, where W. J. Browning will put it to pumping water for irrigating. He is confident from his own experience that there is a margin of profit in pumping water for wetting wheat ground. If this can be demonstrated it will change the old methods of raising wheat in this valley. It will enable men to escape soul-harrowing worry which turns hair gray twenty years too soon. But in order to make it profitable, pumping must be made cheaper than it has been heretofore.

NEVADA.

BIG LAND AND CATTLE DEAL.—Dinuba Advocate, April 5: John Sparks of Reno, Nev., sold to A. J. Harrell of Visalia, Cal., 20,000 head of range cattle, with his half interest in 300,000 acres of land and a lease on 700,000 acres more. Mr. Sparks received $500,000 in cash and 12,000 acres of land in the Texas cotton belt. This land is valued at $50 per acre, so the amount involved in the transaction is $1,100,000. The cattle and land sold by Mr. Sparks cover a half interest in the Sparks-Harrell Cattle Co. Mr. Harrell becomes sole owner. This deal makes him the largest cattle owner west of the Missouri.

OREGON.

DROPPING FRENCH PRUNES. — Portland Oregonian: Prune growing has not been a very lucrative business for the past two years, as a general thing, though growers in favored localities have had no cause to complain. There is a general belief that there is a successful future for the business, and many persons are putting out more prune trees, and others would do so if trees could be obtained, but most of the nurserymen have let their stock of prune trees run down of late. Albert Hawkins of Helena, Montana, who owns a prune ranch in Clark county, Washington, came down this spring and superintended the setting out of about 1000 more prune trees on the place. Many prune growers are preparing to have all the French prune trees on their places grafted and changed to Italian prunes, and will not any longer bother with the little French prunes. There is a style of drying prunes which, when it becomes general, will add greatly to the value of the prune crop. The prunes prepared by this process are known as "process" prunes, and are steamed or slightly cooked, apparently in their own juices. Some person is endeavoring to patent this process, and so far but few of the prune growers in this region have prepared their prunes for market in this way, but more will do so this season. The prunes prepared by this process look as if they had been dipped in some sweet solution, and are soft and tender and retain all their natural sweetness and flavor, and are delicious in the dried state or when cooked.

CANNING HORSE MEAT.—A Portland telegram of April 8th says: The horse abattoir at Linnton, which was shut down last fall, has started up again. As conditions are more favorable now for its successful operation, it is likely to be running indefinitely. About 800 cayuse ponies have been sent in from the ranges and it is probable that 10,000 will be slaughtered this year. It is estimated that there are more than 500,000 cayuse ponies ranging over the country tributary to this market. Stockmen are very anxious that these horses should be driven away to preserve the ranges to cattle and sheep. Horse meat has found favor in Sweden and Norway and several orders have been received from there.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

Every bottle sold is warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid**, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O

THE HOME CIRCLE.

There Is No Death.

There is no death ! the stars go down
To rise upon some other shore,
And bright in Heaven's jeweled crown
They shine for evermore.

There is no death ! the forest leaves
Convert to life the viewless air ;
The rocks disorganize to feed
The hungry moss they bear.

There is no death ! the dust we tread
Shall change, between the summer showers,
To golden grain, or mellow fruit,
Or rainbow tinted flowers.

There is no death ! the leaves may fall,
The flowers may fade and pass away—
They only wait through wintry hours,
The warm, sweet breath of May.

There is no death ! the choicest gifts
That Heaven hath kindly lent to earth
Are ever first to seek again
The country of their birth.

And all things that for growth or joy
Are worthy of our love or care,
Whose loss has left us desolate,
Are safely garnered there.

Though life become a weary waste,
We know its fairest, sweetest flowers,
Transplanted into paradise,
Adorn immortal bowers.

The voice of bird-like melody
That we have missed and mourned so long
Now mingles with the angel choir
In everlasting song.

There is no death ! although we grieve
When beautiful, familiar forms
That we have learned to love are torn
From our embracing arms ;

Although with bowed and breaking heart,
With sable garb and silent tread,
We bear their senseless dust to rest,
And say that they are dead.

They are not dead ! they have but passed
Beyond the mists that blind us here
Into the new and larger life
Of that serener sphere.

They have but dropped their robe of clay,
To put their shining raiment on ;
They have but wandered far away—
They are not "lost" or gone.

Though disenthralled and glorified,
They still are here, and love us yet,
The dear ones they have left behind,
They never can forget.

And sometimes, when our hearts grow faint
Amid temptations fierce and deep,
Or when the wildly-raging waves
Of grief or passion sweep,

We feel upon our fevered brow
Their gentle touch, their breath of balm ;
Their arms enfold us. and our hearts
Grow comforted and calm.

And ever near us, though unseen,
The dear, immortal spirits tread—
For all the boundless universe
Is life—there are no dead !

—J. L. McCreery.

Jack's Coat.

Jack Turner looked gloomily out of window, his handsome face disfigured by a frown.

"It's always so. Just as sure as I have a chance for a good time, some obstacle arises to prevent it. Howard has a pass for me, and my trip South wouldn't cost me a cent, if only I had something decent to wear."

Mrs. Turner dropped her work and sighed.

"It does seem hard, Jack, but really I don't see how to help it. If we should buy you a summer suit now, you'd have to wear your old suit again next winter, you know," she said, plaintively.

"Oh ! I know that well enough, mother, so it isn't worth while talking about it. It seems to me I've heard of nothing but poverty all my life. We're poor, Job's turkey wouldn't associate with us," he said savagely and then stalked from the room with the air of a martyr.

His sister Doris went on darning steadily for awhile.

"I'm ever so sorry for poor Jack," she said at last, a suspicion of tears in her voice. "I wish I could help him some way, but I'm afraid I can't manufacture a suit of clothes for him. I really do believe I could make him a coat and vest, though, if only I had the material. You know I am an export maker of pockets and buttonholes, and you often say my pressing is equal to a tailor's."

Mrs. Turner's face brightened.

"Yes, you are splendid at that sort of thing. Doris, I think it is a gift ; or perhaps it is only a delicate touch, a true eye, and unlimited patience. Whatever the quality may be, I know I do not possess it. Jack would never wear a coat made by his mother," and she laughed softly at the idea.

"Suppose he had a coat and vest, mother, has he any trousers fit to wear South ?" asked Doris.

"Yes, those dark gray ones could be sponged and pressed till they'd look as good as new."

Doris put down her darning, ran upstairs, and returned in a moment with a full skirt of black gown on her arm. Her face was radiant.

"Jack can go, mother. I can get a coat and vest out of this gown, with careful cutting. The material is lovely, silk and wool, even finer than is ordinarily used for gentlemen. My big brother will be quite a swell in it," she said merrily.

"Why, Doris, you surely don't intend to use that good gown in that way ? It is the only decent one you have for cool days," remonstrated Mrs. Turner.

"Indeed I do, mother, I can wear my old brilliantine by freshening it up with a new facing and ribbons, and dear old Jack shall have his outing."

"But Jack will not allow you to sacrifice your best dress for him, Doris."

"Jack will know nothing about it. I can easily find out his measures and I know where I can get good patterns. If he asks questions, I'll evade them so skillfully he'll think we've had a sudden streak of good luck," the girl said, gaily.

"But it doesn't seem fair, Doris. If Jack would give up smoking, he could soon save money enough to buy his clothes himself," Mrs. Turner protested.

"Now mother, dear, don't you fret about your daughter. I'll have such jolly times and chatter and beam and smile upon people so broadly that they'll forget to notice my shabby attire. Of course, Jack ought to be ashamed of himself for wasting money upon such an expensive and filthy habit; but I hope yet to some day coax him to stop." And full of her generous purpose, Doris tripped upstairs to begin her loving work.

Soon afterwards Mrs. Turner went into the kitchen to see about dinner, utterly unconscious that her guest. Howard Halliday, was lying upon the couch in the parlor, where he had gone an hour before with a severe headache. He certainly had not intended listening ; but it had happened so quickly that he had not had time to make his presence known. He was not very penitent. He felt there could be no harm in reading another page in the sweet, unselfish life.

He had begun his acquaintance with Doris by being amused at her quaint, old-fashioned sincerity ; and he had not been in the house six hours as Jack's guest, before the young lady gave him a surprise that made him very nearly angry.

It was just after tea and they had adjourned to the broad porch to enjoy the lovely sunset. He had pulled out his cigar case, and with an air of easy assurance turned to Doris.

"You have no objection to my smoking ?"

"Indeed I have. I hate tobacco smoke and even if I did not, I should object on principle."

For once in his life Howard's grace of manner forsook him, and he thrust his cigar back into its case as awkwardly as a schoolboy, his face crimson.

Doris sat demurely swaying back and forth in her light rocker, one pretty rounded arm upraised, toying with a spray of honeysuckle. Apparently unconscious that she had said or done anything out of the ordinary, she smiled in a friendly manner into the gentleman's clouded face.

"You are the first young lady that I ever met who objected to the odor of a fine cigar," he said, half rebukingly.

"I am the only one who has been courageous enough to tell you so ; or, perhaps it would please you better to say I am the only one selfish enough to deprive you of such pleasure. But I'll warrant many a lady has been forced to tell you a polite lie, rather than make herself disagreeable by telling the truth," she said, good-naturedly.

"So you do not tell untruths for the sake of being pleasant, it seems," Mr. Halliday said, interrogatively, a tinge of sarcasm in his voice.

"Not when a principle is involved. I claim that the use of tobacco in any form is unwholesome, unclean, selfish, and extravagant, so of course I cannot sanction smoking, even though the cigars may be of the finest."

"Oh ! I see you are one of the advanced thinkers, or 'reform' women, who are slashing right and left at the small vices of the sterner sex. You wish men to be little less than angels, lacking physical force, and manly independence," he retorted, hotly.

"I belong to the class who believe that men should be as free from vices as women ; good, pure, and true ; of the finest physical development, and brave enough to resist temptation, no matter in what guise it may come," she said, quietly.

A rather heated argument followed in which Mr. Halliday felt himself decidedly worsted. To cover his defeat he gladly accepted Jack's invitation to call on his "best girl."

That tilt of words was by no means the last, nor was it the last in which Mr. Halliday left the battlefield ingloriously. It must be confessed his self-approbation was often hurt, and that in thinking over their discussions afterward, Howard frequently assured himself he barely escaped disliking his friend's sister. That women should have "opinions" at all seemed unwomanly to him ; and to be defeated by one was almost unbearable.

Yet, aside from this unpleasant feature, little Doris seemed one of the most unselfish and lovable girls he had ever met. He felt sure his stately mother would approve of her, and the thought sent a queer little spasm of pleasure through his hitherto invulnerable heart. It was just like her to sacrifice her best dress to give Jack an outing. He hadn't much faith in the result, though, and he laughed to himself as he thought of the stylish Jack in a badly fitting and badly made coat. His first impulse was to tell Jack in time to prevent the worse than useless sacrifice ; but that would be betraying a secret not intended for his ears, so he could only be silent and await developments.

For the next three or four days Doris was scarcely visible. Jack stormed because she did not give more time to their guest. It was "just like a girl's vanity," he said, "to care more for stitching away on an old machine, making finery, than to care for the comfort and happiness of two forlorn men." And Howard, watching the sensitive face flushing under the unjust accusations, thought her the sweetest and loveliest of women.

At last, one afternoon, as Jack and Howard were lounging on the porch, Doris came tripping demurely up the street, carrying a neat package. Her eyes shone with a light that fairly dazzled Mr. Halliday, and in a moment he comprehended her plan. He arose as she came up and offered her a chair ; but she shook her head playfully, and passed on into the sitting-room. Presently she called Jack.

He got up lazily and went in. Howard longed to follow but dared not.

He expected every moment to hear Jack's voice in angry derision ; instead, that young man soon appeared with a beaming face, his fine figure adorned with a well-fitting and beautifully-made coat.

"I tell you, Howard, there's nothing like having the right kind of women folks. Mine have rigged me out in these handsome new duds, and I'm happier than the winning captain of a football team. I can go with you now. I only refused before because I hadn't anything fit to wear in your warm climate, and I was too poor to buy anything. Uncle Walter only allows me barely enough to squeeze through college, and Doris' teaching scarcely furnishes mother and herself with the necessities."

Jack paused, and Howard, feeling like a hypocrite, cudgelled his brain for something to say.

"Doris and mother are wonderful women, anyhow. Doris has the knack of making the commonest things look dainty and artistic, and mother—why, mother can easily evolve something out of nothing. I am sure now they must have pinched themselves awfully to buy these nice things, unless Doris has sold one of her pretty water colors, as she does sometimes. It must be that for Doris declares she hasn't taken a dollar from the family treasury. It's just like her, bless her generous heart! Anyhow, I'll not worry her asking questions, for I know she's as happy over it as I am. Have a cigar ?" extending a finely flavored one to Mr. Halliday.

That gentleman declined almost rudely. "I've concluded not to smoke any more. Your sister is right. The use of tobacco makes a man blind and selfish."

He was half angry with Jack for accepting so unquestionable a sacri-

FOR A CHILD

who is "not doing well"—the condition occurs now and then with all children.

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fice Doris had made, and he kept thinking how soon Jack might have saved money enough to buy his own clothes, had he been half as self-denying as his sister. Jack looked at him in astonishment.

"Will wonders never cease? To think of your giving up smoking is a stunner! Next thing you'll sign the total abstinence pledge, and fit yourself for a church deacon. Doris will be delighted," he said, between puffs.

"Don't tell her; I want to tell her myself. And Jack, if you were half the man you ought to be, you'd stop smoking yourself and save your money to buy the things you need. I swear I'd be ashamed to let a little delicate girl help to clothe me," Howard said indignantly.

Jack's sun-burned face took on a bright red.

"You're confounded polite in your way of putting things," he said, giving his cigar a petulant fling that landed it in the rosebed, "and you're grown virtuous very suddenly, it seems to me."

Then there was a long silence broken by Jack.

"Thank you, Howard. You're right, I've been a selfish beast to let mother and Doris spoil me so. And if you, who can so well afford it, can quit smoking, I will, too."

"If you come down to facts, I guess it is as Doris says; we can none of us afford it, not even if our pocketbooks are overflowing. We cannot afford to risk the many evil physical results likely to follow and be repeated in future generations, to say nothing of poisoning the air for others who detest the odor," Howard said gravely.

"You talk as if Doris were dictating," Jack said, lightly.

"As she is in a measure. I'm such an egotistical prig that I have lacked the courage and grace to acknowledge how much her arguments have affected me. I think I shall be brave enough to tell her before I go," Mr. Halliday continued, frankly.

Jack was silent. Brotherly intuition had suddenly opened his eyes.

"And if you think there is the least hope for me, I've something else to tell her before I meet my mother. I know I'm not half good enough for her, but I intend to grow better, and—Howard stopped abruptly, nervousness making his voice husky.

"Jack grasped his hand and squeezed it until it ached.

"No, you're not good enough for her, old fellow. No man is; but if she loves you as well as I do, she'll take you."

That evening Doris and Mr. Halliday sat on the porch in the starlight, having reached a perfect understanding.

"I think I commenced loving you because you were so frank and outspoken, so unlike the conventional society girls I have grown so tired of; but the thing that showed me my heart, as nothing else could have done, was Jack's coat."

"Jack's coat!" Doris exclaimed in astonishment. "Who ever heard of anything so absurd?"

Then she turned upon him quickly.

"Howard—you didn't—you don't know——!"

"Yes, I do, too. I heard you talking it over with your mother, you dear, generous little girl!"

"Aren't you ashamed of youself?" she asked, trying to disengage her hand.

"Not a bit. It was the last little link to fetter my heart to yours forever," holding the struggling hands firmly upon his breast.

"You won't tell Jack? Please do not. It would spoil his whole trip South to know he was wearing his sister's dress."

"I promise not to tell till the day he starts home. He'll be a better man for knowing it then. Your unselfish act will make it easier for him to resist small vices and extravagances in college next year. Besides, my own character has been improved, and my life made one of perfect happiness by reading your perfect soul through the medium of Jack's coat."—Waverly Magazine.

Progress of the Nineteenth Century Woman.

Written for the PACIFIC RURAL PRESS by ELNORA MONROE BABCOCK.

One hundred years ago woman was not a factor in religious, industrial, commercial or political life to be considered. At the beginning of the nineteenth century she had no legal rights that man was bound to respect. She belonged, body and soul, to some man. She did not own the clothes she wore, even if she had earned the money with which to purchase them. She had no legal control over her own person, earnings or children.

Women were shut out of the schools and colleges, the trades and professions and all offices under the government; paid the most meager wages in the few occupations open to them, and denied everywhere the necessary opportunities for their best development. Worse still, women had no proper appreciation of themselves as factors in civilization, and the few noble souls who were possessed with a prophetic vision of what the future held in store for women were met on all sides with ridicule and contempt. Believing self-denial a higher virtue than self-development, women ignorantly made ladders of themselves, by which their fathers, brothers and sons reached their highest ambitions, creating an impassable gulf between them. Nothing was more common than to see the sons of a family educated while the daughters remained ignorant.

Dr. Gregory, who was standard authority upon female propriety in the eighteenth century, in his work entitled "Legacy to My Daughters" says:

"Should you be so unfortunate as to possess a robust constitution by nature, assimilate such a sickly delicacy as is necessary to keep up the proper female charm."

He cautioned all women to carefully hide any good sense or learning they might possess, as men looked with malignant eye upon women of sense and learning.

For over one hundred years after public schools were established in Massachusetts girls were not allowed to attend, and when the effort was made on the part of the trustees of Hatfield school to admit girls the chairman sprang to his feet, exclaiming: "What! Shes in Hatfield school? No, never!"

As late as 1847, when Lucy Stone graduated from Oberlin College, the first college to open its doors to women, they would not allow her to read her graduating essay, but said some professor would have to read it for her, as it would not be proper for a woman to read in public. Nearly forty years after, when Oberlin celebrated her semi-centennial, Lucy Stone was invited to be one of the speakers at that great gathering.

At one time when a minister was asked to give notice that a woman would speak in the town he announced that a woman would attempt to crow like a cock.

To-day two-thirds of the colleges and universities of the United States, including every State University west of Ohio, are open alike to men and women. Thousands of women are college graduates, hundreds are regularly ordained ministers, scores are practicing lawyers. Women are engaged in a great variety of trades and professions which require skill and intelligence. They have secured the right of public speech. They are potent factors in literature. They are writers for the press, editors and reporters for the newspapers. Seven-eighths of all our teachers are women. They are organized in clubs. Better still, they unite with men in many associations—literary, artistic, reformatory, social and political. They play golf and ride the bicycle.

This progress has come because women of a larger mold, loftier ambitions and nobler self-respect than the average have been willing to face the opposition of the world for the sake of liberty. More than one such as these deserve the rank of martyr. The suffering, the doubt, the obloquy which has been endured by the pioneers in the woman movement will never be fully known or understood. For sixty years and more a vigorous agitation has been waged in the United States to establish equal rights for women with men. Under its influence and guided by the leadership of brave men and women, the evolution of woman's rights has moved on without a break.

The twentieth century will belong alike to man and woman, and by its close all the vexed questions of woman's rights will have passed beyond dispute, and in its place will be the demand for human rights without regard to sex.

DOMESTIC ECONOMY.

Hints to Housekeepers.

A few slices of orange added to a cream of tomato soup just before serving will, it is said, improve the flavor.

The water in which meats are cooked should be allowed to cool, in order that the grease may be removed for the drippings.

An ingenious woman who opens the windows at the foot of her bed at night has safeguarded herself against colds from that source by fastening upright brass rods to the footboard, with a horizontal brass rod between. Upon this is shirred a silk curtain.

To make a delicious fish salad pick up canned salmon or any cold fish, season it with salt and paprika, and cover it with mayonnaise dressing with which has been mixed chopped olives, capers, pickles, chowchow or any other relish of the kind. Serve it on lettuce or cress. About a cupful of dressing to two cupfuls of fish will be needed.

Hominy croquettes may be served for almost any meal, and are delicious as a breakfast dish with maple syrup. To make them mix one cupful of cold boiled hominy, one beaten egg, one tablespoonful of melted butter, a teaspoonful of sugar and a saltspoonful of salt. Stir until it is smooth, and then form into cylinder or ball shapes, flouring the hands well during the operation. Then roll in flour and set them in a cold place for several hours. Fry in deep fat and drain in hot colander.

Domestic Hints.

TENDERLOIN OF BEEF WITH MUSHROOM PUREE.—Cut the tenderloin into slices of uniform size and thickness. Flatten them well, and then after salting them well, fry them in equal quantities of oil and butter. Cook over a hot fire. Take out, drain and set on a baking dish, and glaze in a very hot oven. Around them pour a mushroom puree when serving.

PUMPKIN PIE.—One cup of mashed pumpkin, one tablespoonful of flour, mix with half a cup of sugar, half a teaspoonful of ginger, one teaspoon even full of cinnamon. Mix these together, and when quite smooth add one cupful of sweet cream. This will fill one pie, and if any one says it is inferior to an egg-made pie, then give that person eggs in his pie next time.

CREAMED OYSTERS (CHAFING DISH.—Clean one pint oysters, parboil in lower pan, strain, add half a cup of cream to liquor. Melt in the other pan one rounded tablespoon cornstarch, stir in one heaping tablespoon cornstarch, one-fourth teaspoon salt and a dash of paprika and celery salt, add cream gradually, and when thick add oysters. Serve on shortcake or fancy puff paste.

FOWL AND RICE CROQUETTES.—The remains of cold fowl, a little white sauce, one quart chicken stock, three ounces butter, egg wash and bread crumbs. Chop the fowl quite small, and mix with the bechamel, which should be quite thick. Boil the rice in the stock gently for half an hour, then add the butter and boil until soft and dry. When the rice has cooled to allow handling, form into balls, making a hollow in each of them, which must be filled with minced fowl and covered with rice. Then egg and crumb. Fry and serve with oyster sauce.

IF you look at a dozen common lamp-chimneys, and then at Macbeth's "pearl top" or "pearl glass," you will see the differences—all but one—they break from heat; Macbeth's don't; you can't see that.

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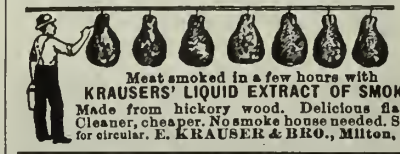

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 10, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	77⅜@78¾	77¾@78⅞
Thursday	77⅛@78⅜	77⅝@78⅝
Friday	*—@—	—@—
Saturday	77¾@76⅞	78 @77⅛
Monday	76⅜@77¼	76⅛@77¼
Tuesday	75⅝@77⅛	75¾@77¼

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	5s 11⅝d	5s 11⅝d
Thursday	5s 11¾d	6s 11¾d
Friday	*-s —d	-s —d
Saturday	*-s —d	-s —d
Monday	*-s —d	-s —d
Tuesday	5s 10⅞d	5s 11 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 00¾@1 00⅞	1 04¼@1 04½
Friday	*——@——	——@——
Saturday	1 00¾@1 01	1 04¼@1 04¾
Monday	1 00¾@1 00½	1 05¼@1 05
Tuesday	1 00⅞@1 00¾	1 04¾@1 05¼
Wednesday	1 01 @1 00⅝	1 04¾@1 04⅞

*Holiday.

WHEAT.

While there has been little change in quotable values for wheat since last review, the Eastern and foreign markets have lacked firmness, and this tone abroad was naturally reflected here. Speculative values in the East were on the down grade most of the week, despite the fact that there was a big deal pending in corn futures and prices for the same were advanced. In England the grain exchanges were closed most of the week, owing to the holiday observances customary at Easter time. The spring growth of wheat on the Atlantic side is reported in the main as being good, and the acreage large. One report states that the condition of the growing wheat plant has not been better in twenty years, and the acreage is the largest on record. This is in all probability colored in favor of the bear interest, but it is helping to depress values, nevertheless, for the time being. It is true, wheat on the Atlantic side has been bringing better prices than on this coast, not being so heavily handicapped there as here with high outward freight rates. The freight market here, however, is unsettled for ocean service and gives promise of being considerably easier in the near future. Some tramp steamers, which have been lately doing service as transports, are now seeking trade in the grain-carrying line and are coming into competition with sailing vessels. The latter have been having a bonanza, and can well afford to accept less money. The United States visible supply east of the Rockies was given at 53,890,000 bushels, indicating a decrease for week of 859,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.01@1.00⅜.

December, 1901, delivery, $1.05¼@1.04¼.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.01 @ 1.00⅜; December, 1901, $1.04¾ @1.04⅞.

California Milling	$1 00 @1 05
Cal. No. 1 shipping, alongside	97½@1 00
Oregon Valley	1 00 @1 01¼
Washington Blue Stem	1 00 @1 02½
Washington Club	97½@1 00
Off qualities wheat	95 @ 97½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	-s-d@-s-d	6s2½d@6s3d
Freight rates	40@——s	35@36¼s
Local market	$0 96¼@1 00	$0 97½@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Business doing in flour is at generally unchanged values, but for other than most favorite brands going to special custom the market cannot be termed firm at the figures ruling. The movement is not heavy, but is of fair volume, considering that there is no very great quantity of flour at present on the market.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

The market has been inclining in favor of the selling interest, although there is no special improvement to record in quotable rates. Not only is barley cheap, and decidedly so as compared with other feed cereals, but it is the only kind of feed grain which for months past has been offering in anything like wholesale quantity. Stocks of barley have been lately greatly reduced, and there is continued good inquiry for feed descriptions. Prospects are that any changes in values during the next few months are much more apt to be in favor of the producer and seller than of the buying interest. The business on Call Board was light, but was at higher average prices than preceding week. The special overland freight rate on barley has been extended to April 30th.

Feed, No. 1 to choice	77½@ 80
Feed, fair to good	75 @ 77½
Brewing, No. 1 to choice	82½@ 87½
Chevalier, No. 1 to choice	— @—
Chevalier, No. 2	— @—
Chevalier, poor	— @—

OATS.

Not much doing in this line, nor is there likely to be much inquiry during the balance of the current season. Stocks are too small to admit of any extensive movement, and prices are on too high a plane for buyers to take hold freely. Choice to select oats are especially in light supply, most of the present offerings being of rather ordinary quality.

White Oats, fancy feed	1 42½@1 47½
White, good to choice	1 30 @1 37½
White, poor to fair	1 20 @1 27½
Gray, common to choice	1 20 @1 37½
Milling	1 42½@1 47½
Surprise, good to choice	1 42½@1 50
Black Russian	1 12½@1 30
Red	1 20 @1 45

CORN.

There are no large quantities on hand of any sort, and not much arriving from any quarter. The market is firm at current rates, and that it will soon be materially more favorable to buyers is not probable.

Large White, good to choice	1 15 @1 17½
Large Yellow	1 15 @1 17½
Small Yellow	1 50 @—
Eastern, in bulk (carload lots)	1 08 @1 10

RYE.

There is no improvement to note in values or the general tone of the market. The demand is light.

Good to choice, new	80 @ 82½

BUCKWHEAT.

Values for good to choice remain quotably as last noted, but market is not firm at these figures. For some Oregon buckwheat, off in quality, $1.35 was accepted.

Good to choice	1 85 @2 00

BEANS.

Supplies of white beans of all kinds continue light, and there is no likelihood of offerings being of other than small volume during the balance of the season. Market is firm at the prevailing rates. Limas are in light supply here and in the East, as also at southern coast points of production, and holders are decidedly firm in their views, asking slightly higher rates than last quoted. In colored beans there is not much doing. Pinks are offering in larger quantity than any other variety, and for this description the market is rather weak.

Pea, fair to good, 100 lbs	— @—
Small White, good to choice	4 75 @4 90
Lady Washington	4 00 @4 15
Butter	4 25 @4 50
Pinks	1 85 @2 00
Bayos, good to choice	2 65 @2 75
Reds	3 00 @3 25
Red Kidney	4 00 @4 25
Limas, good to choice	5 90 @6 00
Black-eye Beans	2 75 @3 00
Horse Beans	1 75 @2 00
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

Not many domestic, either Green or Niles offering, neither is there any special inquiry at present, millers and local jobbers being fairly stocked for the time being, mostly with imported.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

Business in the local market is looking up a little, but trade is still far from active. Prospects are favorable, however, for considerable activity in the near future. Prices keep at a rather low range. While no boom is looked for, any changes in values in the next few months are more apt to be to firmer than to easier figures, especially for best qualities. The wool arriving is showing in the main good condition.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

Stocks on the entire coast have been worked down to small proportions, leaving little upon which to base quotations. Even old hops are scarce and are sought after, but only at low figures. Some contracting for this year's hops is being done at about same values as have been current the past season.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

There is a moderate movement in hay at much the same range of values as current for some weeks past, but market is not firm, particularly for ordinary qualities or other than most select grades. Offerings of common to medium qualities are liberal, as compared with demand. Straw is quiet, but fairly steady.

Wheat	8 00@13 00
Wheat and Oat	8 00@11 50
Oat	7 00@11 00
Barley	6 00@ 8 50
Volunteer	5 00@ 7 00
Alfalfa	8 00@ 9 50
Stock	5 00@ 7 00
Compressed	8 00@12 50
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

While there was a sufficiency of Bran and Middlings for immediate needs, offerings were not what could be termed large, and values were well maintained, the quotable range remaining about as last noted. Rolled Barley continued to tend against buyers. Milled Corn was steady.

Bran, ₱ ton	15 50@16 00
Middlings	17 00@19 00
Shorts, Oregon	16 00@17 00
Barley, Rolled	17 00@17 50
Cornmeal	25 00@ ——
Cracked Corn	25 50@26 00

SEEDS.

Market is quiet throughout. Most kinds are in too insignificant stock to admit of other than the veriest retail trade. In quotable prices there are no changes to record, but under existing conditions values are necessarily rather poorly defined.

	Per ctl.
Mustard, Trieste	—@—
Mustard, Yellow	—@—
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag market shows decided steadiness, with nothing to warrant anticipating easier prices prior to harvest and firmer figures may rule. It is altogether probable that stocks will prove ample, and it is likely that in the latter part of Summer holders will grant concessions rather than carry stocks into another season. Wool Sacks are in fair request at steady rates.

Calcutta Grain Bags, buyer June-July	6¾@ 7
Calcutta Grain Bags, spot	6⅝@ 6¾
San Francisco Grain Bags, 22x36, spot	6⅝@—
State Prison Bags in lots of 2000, ₱ 100.5	65 @—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

There is no improvement to note in the condition of this market. Hides are not in active request. Pelts move slowly at quotably unchanged rates. Tallow is in fair demand and values for same are tolerably steady.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	8½	7
Light Steers, under 48 lbs	8	6½
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	6½
Wet Salted Kip	9	7
Wet Salted Veal	9	7
Wet Salted Calf	9½@10	8½@ 9
Dry Hides	15½@—	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	70	@ 90
Pelts, medium, ₱ skin	50	@ 65
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4	@ 4¼
Tallow, No. 2	3¼	@ 3¾
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Market is easy in tone, owing to anticipated free arrivals of new at an early day. There are no large stocks in this center at present of any description, but of amber grades there is more than can be placed at full figures or at prices satisfactory to holders. Of selected water white honey, either comb or extracted, there is virtually none now offering in a wholesale way.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@5
Extracted, Amber	4 @ 4½
White Comb, 1 lb frames	12 @13
Amber Comb	9 @11
Dark Comb	6 @ 8

BEESWAX.

Market is very lightly stocked. Although demand is not brisk at the moment, previously quoted values remain current.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Prices for Beef have remained about as last quoted, the market as a whole presenting a healthy tone. Mutton is in very fair supply, dealers having no trouble in securing all they need for the time being at the prevailing rates, which remain as last noted. Desirable Veal did not lack for custom at full current figures. Lamb was in fair request, but offerings were liberal and values were slightly lower, with market easy at decline. Hog market remained in favor of sellers, although prices are too stiff for packing and have probably touched zenith.

Beef, first quality, dressed, net ₱ lb	7¾@ 8
Beef, second quality	7½@ 7¾
Beef, third quality	6½@ 7½
Mutton—ewes, 7½@—c; wethers	7½@ 8½
Hogs, hard grain fed, medium	6½@ 6⅝
Hogs, small, fat	6½@ 6⅝
Hogs, large, hard	6¼@—
Hogs, feeders	—@—
Hogs, country dressed	8 @—
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	9 @10

POULTRY.

The market was not burdened with choice young stock, large and fat, and such brought comparatively good figures, the quotable range of values showing no very marked deviation from that of preceding week. Common old and small young fowls were not especially sought after, market for these descriptions inclining against the selling interest, with arrivals of the same tolerably liberal. There were no excessive offerings of old or young Pigeons, both kinds meeting as a rule with prompt sale.

Turkeys, live hens, ₱ lb	13 @ 14
Turkeys, live gobblers, ₱ lb	10 @ 11
Hens, California, ₱ dozen	4 00 @5 50
Roosters, old	4 25 @4 50
Roosters, young (full-grown)	6 50 @7 50
Fryers	5 00 @5 50
Broilers, large	3 50 @4 50
Broilers, small	2 50 @3 00
Ducks, old, ₱ dozen	5 50 @6 50
Ducks, young, ₱ dozen	8 00 @9 00
Geese, ₱ pair	1 75 @2 00
Goslings, ₱ pair	2 50 @2 75
Pigeons, old, ₱ dozen	2 00 @—
Pigeons, young	2 50 @2 75

BUTTER.

The market is well supplied, most producing sections of the middle counties and lower coast now turning out their full capacity. There is a very fair demand, however, at current rates and no special accumulations of desirable qualities. Some favorite marks of both creamery and dairy product are selling above quotations. The PACIFIC RURAL PRESS has been steadily informing its readers that the figures of the Dairy Exchange did not represent full values. As in the past, the PACIFIC RURAL PRESS will continue to give the actual market as nearly as possible to do so.

Creamery, extras, ₱ lb	17 @—
Creamery, firsts	16 @—
Creamery, seconds	— @—
Dairy, select	16 @—
Dairy, firsts	15 @—
Dairy, seconds	— @—
Dairy, soft and weedy	— @—
Mixed store	11 @12
Creamery in tubs	17 @—
Pickled Roll	17 @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

Stocks are light, admitting of only small jobbing operations. At current values, however, no great quantities could be placed. Higher prices than are warranted as quotations are being realized in a retail

way, especially for most favorite marks. In quoting the cheese market, the PACIFIC RURAL PRESS has not been wholly governed by the quotations issued by the Dairy Exchange. Hoping that the institution was started on just and equitable lines, and would speedily correct any errors of judgment or otherwise, the PACIFIC RURAL PRESS has not made warfare on the Dairy Exchange quotations, but has at the same time informed its readers that higher prices were current.

California, fancy flat, new	10 @—
California, good to choice	9½@—
California, fair to good	9 @—
California Cheddar	— @—
California, "Young Americas"	9½@11

EGGS.

Tendency is to a wider range in values, with a correspondingly wider difference in quality of offerings. There is no likelihood of strictly choice to select ruling lower, market for eggs of this class being steady at ruling rates. As the correctness of the quotations of the Dairy Exchange have been brought into question, the PACIFIC RURAL PRESS is pleased to state, and a reference to its files will demonstrate the fact, that the readers of this paper were steadily informed of the exact condition of the market and that higher prices than quoted by the Dairy Exchange were steadily being realized.

California, select, large, white and fresh.	16½@17
California, select, irregular color & size.	15 @16
California, good to choice store	14 @15
Eastern, as to section and grading	— @—
Eastern, cold storage	— @—

VEGETABLES.

Considering the time of year, receipts of Spring vegetables are not especially heavy, but arrivals of most kinds are showing increase, more particularly Asparagus, Peas and Rhubarb, and for these kinds prices averaged lower than last quoted. Onions were in limited stock, mostly Australian, with a few Oregon. For choice to select Onions the market was quite firm.

Asparagus, ℔ box	1 00 @2 00
Beans, String, ℔ lb	7 @ 10
Cabbage, choice garden, ℔ 100 lbs	75 @1 00
Cauliflower, ℔ dozen	50 @ —
Cucumbers, ℔ doz	75 @1 00
Egg Plant, ℔ lb	12½@ 15
Garlic, ℔ lb	3 @ 4
Onions, Yellow Danver, ℔ cental	2 50 @3 50
Onions, Australian, ℔ cental	3 50 @4 00
Peas, Sweet, garden, ℔ lb	2 @ 2½
Peppers, Green Chile, ℔ lb	15 @ 20
Rhubarb, ℔ box	65 @ 90
Rhubarb, Mammoth, ℔ box	1 25 @1 50
Squash Summer, ℔ box	1 25 @1 50
Squash and Pumpkin, ℔ ton	—@—
Tomatoes, ℔ box	1 25 @1 50

POTATOES.

Market for thoroughly sound old potatoes is firm, such stock being in rather light supply, as is to be expected at this advanced date. Defective qualities are not particularly sought after, still some lots of very ordinary grade have been placed at better figures than could have been realized a week ago. New potatoes are in moderate receipt and market is inclining slightly in favor of buyers, but that stocks of new will be heavy or prices very low for same for some weeks to come is not probable.

Burbanks, River, ℔ cental	25 @ 60
Burbanks, Petaluma-Tomales, ℔ ctl.	35 @ 60
Burbanks, Salinas, ℔ cental	—@—
Burbanks, Oregon, lb cental	70 @1 10
Early Rose	80 @1 00
Garnet Chile, ℔ cental	90 @1 10
Peerless, ℔ cental	70 @ 90
New Potatoes, ℔ cental	1 00 @1 75
Sweet Potatoes, Yellow, ℔ cental	60 @ 75

The Fruit Market.

FRESH FRUITS.

While arrivals of Strawberries are still of very moderate volume, receipts are on the increase. Select qualities are still bringing fairly good figures, but the quotable range is lower than preceding week. Some very choice are bringing above the regular quotations. Cold storage Apples are offering in rather liberal quantity, but at the comparatively stiff prices asked for same, are not moving very freely.

Apples, fancy, 4-tier box	1 75@ 2 25
Apples, good to choice, ℔ 50-lb box	1 00@ 1 75
Apples, common to fair, ℔ 50-lb box	—@—
Strawberries, Longworth, ℔ chest	8 00@11 00
Strawberries, Large, ℔ chest	5 50@ 6 50

DRIED FRUITS.

The market for cured and evaporated fruits has been the past week about as quiet as it well could be, not to be wholly lifeless. Jobbers have done very little selling, and practically no buying, unless at extremely low prices for occasional lots crowded to sale, and at less than any figures which would be warranted as a nominal quotation. The better feeling in Prunes lately experienced has been given a setback by a legal decision set forth this week to the effect that the Association cannot control the price, or disposition to be made of Prunes, which are not in the possession of the Association, and can only compel delivery through actual purchase, it being held that the contract in question is not legally binding. Following the above legal decision, the Association on Tuesday announced a cut in prices to a 2-cent basis for the four sizes, to be good for fifteen days. The reason given for this cut is that the Association is in need of funds and resorts to this measure to realize money immediately to meet obligations now due. Quotable values for dried fruits, other than Prunes, remain nominally unchanged, but it should be remembered that these figures represent at present little more than asking prices, or the views of holders. The serious damage reported from many sections to the coming fruit crop by frost should impart a firmer tone to the market, and may yet do so, but there is no evidence of values this week having been appreciably affected on this account.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½@ 6
Apricots, Royal, choice, in sacks, ℔ lb	6 @ 6½
Apricots, Royal, fancy	7 @ 8
Apricots, Moorpark	9 @10
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	2½@ 3½
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, choice	4 @ 4½
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, halved, fancy.	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, White and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	3½@ 4½
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	1½@ 2½
Figs, White	2½@ 3½
Peaches, unpeeled	3 @ 5
Pears, prime halves	2 @ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: Four sizes, 2c. per lb.; 40-50s, 3¾c.; 50-60s, 3¼c.; 60-70s, 2¾c.; 70-80s, 2¼c.; 80-90s, 1¾c.; 90-100s, 1¼c.

RAISINS.

The Raisin Growers' Association has made a special rate of 5c per pound on seeded raisins in one-pound cartons, the same to be retailed at 10c per package, the object being to thus advertise the fruit and introduce it to consumers throughout the East and elsewhere. The market is quiet, with no changes in prices other than the one above noted.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—
(Usual advance for fractions.)	
Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½
(Above prices for loose raisins are for 50-lb boxes.)	
Seeded Raisins, 1-lb packages, ℔ lb.	— @ 05

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

The market for Oranges is showing improved condition, more especially for best qualities, stocks having been less excessive than for some time past, and the weather having been in the main favorable for consumers taking hold freely. Lemon market shows no material change, the movement not being very brisk and prices continuing at a low range. Limes are in increased supply and lower.

Oranges—Navel, ℔ box	75@2 00
Seedlings, ℔ box	—@—
Tangerines, ℔ box	75@1 25
Grape Fruit, ℔ box	75@1 50
Lemons—California, select, ℔ box	1 75@2 00
California, good to choice	1 25@1 50
California, common to fair	50@1 00
Limes—Mexican, ℔ box	5 50@6 00
California, small box	—@—

NUTS.

There is a firmer tone to the Almond market, in consequence of the prospect of a very light yield this season, not so much owing to frost as on account of the fruit not having set. Walnuts are practically out of stock. Peanuts are not offering in heavy quantity and are ruling steady.

California Almonds, shelled	18 @22
California Almonds, paper shell, ℔ lb	12 @13
California Almonds, soft shell	9 @11
California Almonds, hard shell	6 @ 7
Walnuts, White, soft shell	—@—
Walnuts, White, California, standard	—@—
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, band-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

The market in all essential points remains virtually as last noted. There is a very healthy tone, but last year's vintage is now practically all out of first hands, and therefore hardly quotable in a wholesale way. Values for dry wines of 1900 vintage are nominally 19@22c per gallon. A dispatch from Los Angeles concerning the increasing value of California wines and brandies states that prices are from 30% to 50% higher than they were two years ago. Two-year-old sweet wines are selling at 42½ cents and higher per gallon, while two years ago the price stood at about 30 cents. Brandies have advanced from 50 to 85 cents per gallon.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	91,410	4,949,714	4,971,099
Wheat, centals	188,849	6,464,431	5,402,350
Barley, centals	42,998	3,257,300	4,587,484
Oats, centals	4,044	578,135	665,558
Corn, centals	750	90,499	111,815
Rye, centals	1,140	108,302	91,997
Beans, sacks	2,697	529,060	340,741
Potatoes, sacks	19,955	1,3[illegible]2,108	1,013,827
Onions, sacks	384	152,004	139,767
Hay, tons	2,974	133,306	129,503
Wool, bales	2,716	29,986	40,995
Hops, bales	265	8,038	9,445

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	44,812	2,839,490	3,367,202
Wheat, centals	176,227	6,243,086	4,832,631
Barley, centals	5,367	1,915,970	3,652,904
Oats, centals	262	48,083	37,988
Corn, centals	4	3,172	16,317
Beans, sacks	255	12,131	23,021
Hay, bales	30	85,119	109,748
Wool, pounds	....	641,031	4,324,433
Hops, pounds	2,382	535,640	977,153
Honey, cases	....	1,758	3,422
Potatoes, pack's	2,327	124,899	66,096

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING MARCH 26, 1901.

670,525.—FRUIT PACKING DEVICE.—C. W. Arrasmith, Courtland, Cal.
670,602.—SHINGLE MACHINE—D. F. Baker, Mt. Tabor, Or.
670,526.—SLED PROPELLER—A. M. Banks, Tacoma, Wash.
670,757.—ANIMAL TRAP—J. W. Barnes, Beaverton, Or.
670,578.—STARTING GATE—T. Barnett, S. F.
670,833.—RURAL SIGNAL DEVICE—F. C. Bates, S. F.
670,658.—ARC LAMP—E. A. Beck, Los Angeles, Cal.
670,839.—DRAFT EQUALIZER—W. C. Campbell, Vashon, Wash.
670,537.—WAVE MOTOR—E. P. Couture, Gualala, Cal.
670,445.—BELT LACING NEEDLE—N. M. Cripe, Elma, Wash.
670,632.—SEAMING MACHINE—W. F. Davis, S. F.
670,418.—SINK—J. A. Duffy, Pomona, Cal.
670,707.—WALL CONSTRUCTION—Fisher & Brouse, S. F.
670,560.—VEHICLE BRAKE—O. Heylmann, Fallbrook, Cal.
670,561.—SHOE LACE CLASP—E. B. Hoegemann, Oakland, Cal.
670,715.—BICYCLE GEAR—Mahana & Pompe, Toledo, Wash.
670,620.—HOP DRIER—J. K. Mount, Silverton, Wash.
670,640.—DOOR HANGER—A. Newell, Pasadena, Cal.
670,807.—AIR SHIP—O. Olsen, Oakland, Cal.
670,543.—VEHICLE GEAR—H. Paulsen, Tacoma, Wash.
670,815.—GAS GENERATOR—W. G. Ross, Benicia, Cal.
670,545.—VAPOR BATH—M. Rostovsky, S. F.
670,457.—FRUIT BRUSHER—H. B. Ruggles, Redlands, Cal.
670,435.—HARNESS—W. F. Schatz, San Diego, Cal.
670,548.—FIRE ESCAPE—W. H. Sliger, McMinnville, Or.
670,521.—VOTING MACHINE—St. Louis & Barceloux, Willows, Cal.
670,544.—STAMP MILL—L. R. Tulloch, Angels Camp, Cal.
670,825.—LETTER BOX—W. L. Vestal, San Bernardino, Cal.
670,652.—EYEGLASSES—H. F. Wallace, Los Angeles, Cal.
670,908.—POWER TRANSMITTER—F. S. Weatherly, Los Angeles, Cal.

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Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

FRUIT PACKING DEVICE.—No. 670,525. March 26, 1901. C. W. Arrasmith, Cortland, Cal.

This invention is designed to facilitate the packing of fresh fruits, such as berries, cherries, etc. It consists of a framework having an opening in which is a concaved slidable bottom with means for adjusting and holding the same; means for holding a fruit receptacle inserted above and covering this opening so that the concaved bottom being first filled with the fruit to form the crown the remainder is filled through the bottom of the box, which is afterwards permanently closed, and the device being inverted the basket is released, and is ready for market with the proper symmetrical crown of fine looking fruit.

RURAL SIGNAL DEVICE.—No. 670,833. March 26, 1901. F. C. Bates, San Jose, Cal., assignor of one-half to W. G. Hawley, same place.

This invention is designed for use in rural or suburban districts for the purpose of notifying grocers, butchers, etc., when they are desired to call at any house on the route. It consists of boards carried in a suitable frame having printed pages, 126 illustrations; Wm. Kent. The subject is treated in a practical way and with an intelligence, personal experience and knowledge of the subject that would make the work of value to any one interested in the subject. Published by John Wiley & Sons, New York City; price $4.

California Dried Fruit at New York.

NEW YORK, April 10.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Fair demand for prunes at current rates. Other dried fruits quiet.

Prunes, 3½@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.

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THE SWINE YARD.

Straw Houses for Hogs.

In the valleys where there is more straw than lumber, a straw shed for hogs may be suggestive to some reader. "The best hog shed I ever had," said a successful swine raiser to the Southwestern Stock Journal the other day, "was a straw shed. It was much warmer in winter than one could possibly be that was built of lumber, and by taking out the north and south sides in the summer time it furnished a cool and airy retreat. It was practically inexpensive, the cost being almost confined to the labor." He then went on to explain the building of the shed. It was 12 feet each side of the ridgepole, or 24 feet wide and 32 feet long. Of course, any desired length could be made. The ridgepole is laid on the crotches of posts 8 feet above the ground. These posts should be set deep enough in the ground to give solidity to the structure. For the same reason it is well to place them not more than 8 feet apart.

The outside posts should be set the same distance apart and should be 2 or 3 feet lower than the middle row. Lay poles across the top of these also. If it is not possible to obtain crotches, the poles can be flattened at the ends and spiked to the posts; then cut poles long enough to reach from the ridgepole to the outside and extend over a foot or so. Notch these poles where they lay over the ridge and eave poles. This will keep them in place. These poles should be laid at a distance not to exceed 3 feet. Over these, crossing them, put on a layer of fine branches, with a few poles to support the straw, which is to be thrown on to complete the roof. When sufficient straw has been thrown on, weight and fasten in place so it will not blow off.

For the sides, set posts extending to the top of the roof and about 3 feet from the roof-supporting posts; then fill in the spaces between with straw, with poles lying horizontally just inside the posts to keep it in place. Near the bottom for a distance as high as the hogs can reach, the poles should be put close enough together to prevent the hogs from pulling the straw out. The door should be made on the south side. It is not necessary to have this more than 3 feet wide and 4 feet high. It can be put in by setting posts and building up the sides of the door frame as the side walls are being built. When the door has reached the desired height, a half dozen poles laid across will support the straw wall to be built above. For closing the opening, a door can be made of lumber or the opening left, as little cold will enter.

If there is any better material for the roof than straw at hand, such as long slough grass or cane, it can be used, as it will turn the water better. The shed should be built on high ground, and the inside filled in so that there will be no surface water running into it. Fresh material for roof and walls will not be necessary oftener than every two or three years, and this will take but little work, as the posts and poles of the old shed will be in position for the new.

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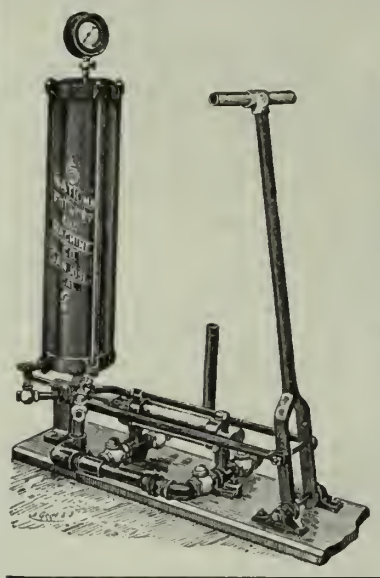

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FRUIT MARKETING.

Walnut Marketing.

Frank E. Kellogg of Goleta gives the Santa Barbara Press an interesting sketch of the handling of the walnut crop of the southern counties. A meeting of the executive committee of the walnut growers' associations of southern California was held at the Los Angeles Chamber of Commerce on the 19th inst. Reports showed that for the season of 1900 the output of the various associations was as follows, the figures indicating carloads:

Fullerton	45
Golden Belt	33
Saticoy	15
Santa Barbara	17
Santa Ana	31
Mountain View	15
Rivera	151
Total	267

By growers not members of the associations there were produced approximately 233 carloads, making the entire output of the State 500 carloads.

The association nuts all sold at the prices fixed by the executive committee, viz.:

	Cents per pound.
No. 1 soft shell	10
No. 2 soft shell	8
No. 1 hard shell	9½
No. 2 hard shell	7½

From these prices was deducted the usual brokerage. The price was the best secured in many years, and the associations are highly pleased.

Growers outside of the associations did not receive nearly so good a price, and some of their walnuts are still unsold.

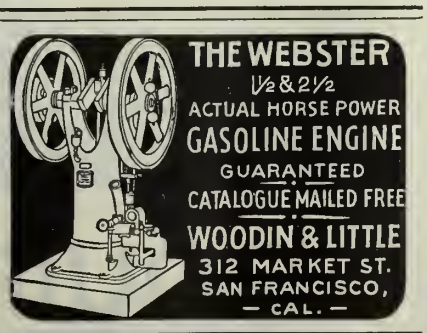
Thus the advantages of co-operation have been conclusively demonstrated. It is hoped that this truth will require no further demonstration, and that outside growers before the next crop is harvested will nearly all become members of the associations.

If, say, 90% of the growers unite with the associations, then competition among themselves will practically come to an end, and with a rapidly increasing market in the East, and with the foreign nuts six weeks later in reaching the market than ours, there is no reason why good and satisfactory prices cannot be steadily and permanently maintained.

Co-operation is the spirit of the age, and the highest expression of business sagacity the world has yet seen. Not only so, but it has become the imperative necessity of the hour. Those industries which avail themselves of the benefits of co-operative effort are everywhere on the high road to success, while those who plod along in the old-fashioned, single-handed, competitive way are doomed to certain failure.

Successfully Used Caustic Balsam.

FORESTVILLE, MD., Jan. 4, 1901.
I have used a great deal of GOMBAULT'S CAUSTIC BALSAM and have been very successful with it. What can you sell me the Caustic Balsam for by the dozen bottles? E. E. BERRY.



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It is very amusing to see how our "would-be competitors" now prate about

TESTS AND TESTIMONIALS

In the past they have been very fast to advocate tests, but they have been beaten so many times by

The Improved United States Separator

they are now trying to cast slurs on all tests and discredit all testimonials.

When they were competing with inferior separators and they could sometimes beat, then

TESTS AND TESTIMONIALS

were in great favor with them and they were advising everybody to "put it right in the contract," but now that they are competing with a better separator they wish the public to believe that

Tests are Fake and Testimonials are Bought

claiming they are manufactured out of whole cloth and that it is impossible to locate the places or the persons. In this connection we call attention to the following statement and ask if they have any trouble in locating it.

Three U. S. Separators to one of all other makes

POUGHKEEPSIE, N. Y., October 23, 1900.

Fourteen years ago this month we started our creamery on the co-operative plan recommended by your agent, fitting the building with machinery from your Company, and using the Cooley Creamers for the patrons. We have run on this same plan for all these years until a year ago last month we put in separators. **Our patrons are using more than three to one of the U. S. Separators over all other makes and we believe the U. S. Separator to be the best on the market.**

We are still working the cream gathering plan and believe it to be the best for the rural districts, where unavoidably some of the patrons are a long distance from the creamery. We are satisfied with it because we believe it to be the best and the cheapest. No farmer can afford to hitch up and carry his own milk, even if he live within a half mile of the creamery, if he can get it done, as we have this year, at the average cost to each patron per day of 8⅓ cents.

H. R. HOYT, President LaGrange Creamery.

As the main works of the DeLaval Separator Co. are located at Poughkeepsie, they are painfully aware that the LaGrange Creamery is right under their shadow and that there are so many more United States Separators than DeLavals used right around them. They tried hard to keep the U. S. out, having as many as eight men canvassing there in their endeavors to do so, but Mr. Hoyt's letter shows how vain were their efforts.

Merit is sure to win, which is why the U. S. is so popular.

Readers will remember that these "would-be competitors" advertised that the separator business "is perforce productive of fraudulent claims and misrepresentations of facts." The dairymen can judge from this frank admission of theirs what they have been compelled "perforce" to do to get their tests and testimonials.

We have never been compelled to resort to dishonest methods or make dishonest claims or claim a Grand Prize at Paris, as our "would-be competitors" did, when the official lists of awards showed none was awarded them. How is this for a **Fake Claim?**

The Improved United States Separator

has merits sufficient to win without such dishonorable methods. It is acknowledged to be

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THE VETERINARIAN.

All About Loco Poisoning.

Dr. W. K. Lewis gives the Farm and Field a historical sketch of the loco weed and his experiments with the poison, which will be interesting to our live stock readers.

THE PLANTS.—Other than a description of this so-called poisonous plant with a few vague references as to the peculiar effect upon animals, literature upon the subject is limited, while on the other hand presumptive guesses are abundant.

In 1893 the United States Department of Agriculture was furnished with a specimen of the plant which was respectfully acknowledged in the 1874 year book, asking for outside observations and notes. In 1878 other specimens were sent and analyzed without result, but the same year we find in the American Journal of Pharmacy, December number, a concise report from Miss C. M. Watson, Ann Arbor, Mich., in which she claims to have isolated a small quantity of an alkaloid and resin from the plant; but on further experimentation 160 grains of the dried root were taken in forty grain doses within two hours without any perceptible effect. One and a half ounces of the fluid extract was given to a kitten two months old without effect. In 1888 the Department of Agriculture took it again in hand. Prof. V. K. Chesnut, chief of the division of botany, in bulletin No. 20 described the plant as belonging to the pea family, of a silvery white color, and a silky leafed perennial 8 to 12 inches high, with an abundance of foliage springing out in a cluster from a short central stem close to the ground. The flowers are pea-shaped and usually purple. The pod is distinctly two-celled. The plant is a native of the great plained region extending from west Texas on New Mexico northward to South Dakota and Wyoming. Such is the description and habitat of the plant

There is still another species of this noxious plant, differing only in general appearance, growing more erect, branchless, with leaflets of an oblong rather than an ovate shape, with one-celled seed pods instead of two. Of this kind we have not seen large quantities in the West, where patches covering several acres of the woolly loco weed are numerous. Both of these plants flower very early in the spring.

LOCO EFFECTS.—In the same book we find a description of how stock are effected in the following language: Horses, cattle and sheep are effected by loco, but the principal damage is done to horses. The effect is not acute, but in its slow progress simulates diseases caused by bacteria, worms or other parasites, or such as are caused in man by the continued use of alcohol, tobacco or morphine. Two stages are recognized. The first, which may last several months, is a period of hallucination or mania accompanied by defective eye sight, during which the animal may perform all sorts of antics. After acquiring a taste for the plant it refuses all other kinds of food and the second stage is ushered in. This is a lingering period of emaciation, characterized by sunken eyeballs, lusterless hair and feeble movements. The animal dies as if from starvation, in periods ranging from a few months to one or two years.

EXPERIMENTS WITH LOCO.—We commenced a series of mixed experiments, first by feeding it with hay to a pony. This was repeated several times with about two pounds of the plant and a wad of hay without any results, good or bad. Next we procured a green extract from which we made a tincture, and from the plant itself a saturated solution of the extract. We took two drachms, rolled it in a tablespoonful of flour and fed it to a chicken with no result. Next we fed a motherless calf four large tablespoonfuls in its milk with the same effect. We fed it in bran mashes in two-ounce doses for two days in succession to the pony, which ate it with impunity. A portion of the tincture was sent to Washington, which was the last we saw of it, but another portion of the tincture we carried for a long time in our medicine chest. One day a horse was very sick from an attack of acute indigestion or spasmodic colic. We gave it five ounces of tincture of loco in a quart of tepid water with good results. Of course it was the alcohol that did the work.

Such is the result of scientific and practical experimentation with the loco weed, and while all this may not be sufficient to convince the most prejudiced mind, it is nevertheless a fact that it is innoxious when mixed with other food, but of itself it is absolutely indigestible, thus repelling the resolvent influences of the gastric juices and fails to supply nourishment to the body, hence we see a gradual collapse, first of the nerve center, the brain, followed by partial or complete paralysis of the optic nerves, evidenced in defective sight by shying and falling to its knees when the head is put to the ground. The least excitement brings on rearing and plunging, invariably ending in a broadside fall. At other times capering beyond themselves or evincing strong symptoms of semi-consciousness, succeeded always by sleepy or comatose conditions, all going to prove more fully the correctness of our opinion based on the analysis that all these conditions are brought about by an impoverished condition of the brain, other than a poison contained in the plant.

Animals eat in their natural proclivity for any green herbage at a time when grass is hay and other herbage even less succulent. The plant is easily killed if cut off at flowering time and no rain follows. In young horses where the great nerve center is not so completely atrophied as to render it functionless, great reparation can be brought about by a thorough course of medicine, judicious feeding and progressive stimulation to the most highly stimulated diet. When animals are found locoed they should be taken up and placed under a course of rational treatment such as prescribed.

Answers by Dr. Creely.

SKIN DISEASE OF SWINE.

TO THE EDITOR:—I have two Poland-China gilts afflicted with, apparently, a skin disease on hind legs. The skin is thick, hard and in scales, resembling an alligator hide. Where the joints work in walking are deep cracks, with some pus in them. The pigs eat well and are lively, but do not thrive as well as before. What is the disease and remedy?—SUBSCRIBER, Yerington, Nev.

Paint it over two times daily with compound tincture iodine for three days, after which apply the sulpho-iodide ointment. DR. E. J. CREELY.
510 Golden Gate avenue, S. F.

Southern California Jersey Breeders.

TO THE EDITOR:—The Jersey breeders of southern California met in Santa Ana March 15th and organized under the name of the Jersey Cattle Breeders' Association of Southern California. The object is to bring the breeders and dairymen into closer communication and advance their common interest by the establishment of honorable and fraternal relation and secure the benefits of co-operation; also to increase the interest in Jerseys and weed out any breeders or cow jockeys whose methods are questionable.

The following are the officers: Guy H. Miller, Riverside, president; Rev. A. B. White, Los Angeles, vice-president; N. A. Chisholm, Santa Ana, secretary; Geo. E. Platt, Los Angeles, treasurer; E. E. Moore, Compton; C. S. Burgess, Riverside; W. Jay Cole, Anaheim; A. E. Warner, Santa Ana; D. G. Whiting, San Bernardino, directors.

A special meeting will be held in Los Angeles during fair time and the annual meeting will be held in Riverside March 15, 1902. Any one owning or breeding Jerseys registered in the A. J. C. C. is eligible to membership and all interested ones are requested to correspond with the undersigned at Santa Ana, Cal. N. A. CHISHOLM.

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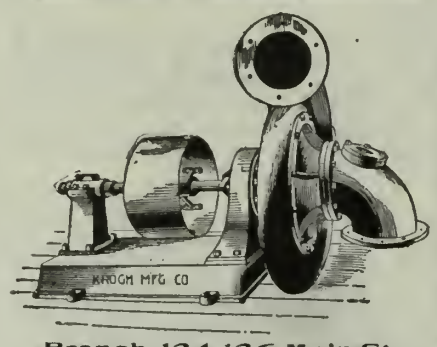

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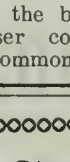

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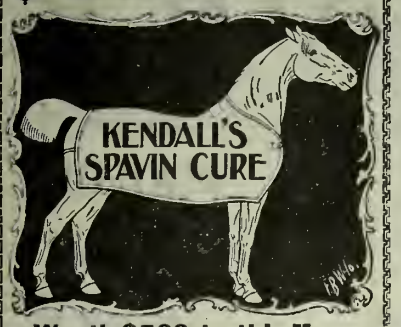
WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.

$100 EVERY YEAR.



Worth $500 to this Man.
Cromwell, Conn., Apr. 3rd, 1900.
DR. B. J. KENDALL CO.,
Dear Sirs:—I have used your Kendall's Spavin Cure for the last five years and I think it has saved me $500.00 in that time.
Respectfully yours, Henry Kelsey.
Such endorsements as the above are a guarantee of merit. Price, $1; six for $5. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address
Dr. B. J. Kendall Co., Enosburg Falls, Vt.

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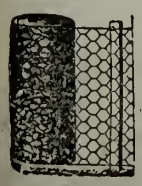

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Patrons of Husbandry.

Tulare Grange.

To THE EDITOR:—Tulare Grange convened at its hall on Saturday, the 6th, in the afternoon. Two were elected to receive the degrees, and the third and fourth degrees were conferred in an impressive manner on a class of four.

Mr. E. A. Shane, organizer of Rochdale stores, and representing the Wholesale Rochdale Company of San Francisco, was invited to address the Grange on the principles of Rochdale co-operation. The subject was freely discussed, in a general way, without coming to any definite agreement. Incidentally the success and failure of co-operative stores, heretofore tried, was discussed, but as the Rochdale plan of co-operation contemplates buying only for cash and selling only for the same it is generally admitted it offers better prospects of success than any of those co-operative attempts heretofore made did.

The members of Tulare Grange feel favorable to co-operation under the Rochdale system, but desire more time to consider the advisability of undertaking such a project here. They deem it advisable to know their associates, the capital necessary and the parties in whose hands the management will be placed. They desire to make haste slowly and whatever they do to be a success.

The members of the Grange were invited to attend a Farmers' Institute and picnic to be held at Poplar on the 15th of this month. Several members will attend.

The Lecturer announced the April subject for consideration of subordinate Granges, of the National Grange Quarterly Bulletin, is "How can the Grange exert a greater educational influence upon its members?" with an alternative subject, "Are our public schools as useful as they might be, and what can be done to improve them?"

A consideration of the condition of crops was had. No crops are actually suffering for it, but all will be the better for rain; peaches, apricots and prunes in some localities are injured by frost, in other orchards they have not been affected. The present fruit and grain prospects are very favorable for good crops. J. T.

Grange Notes.

D. M. Winans, National Deputy, is working in Contra Costa and Alameda counties in the interest of the Grange.

Worthy Master G. W. Worthen, Master California State Grange, and D. M. Winans, National Deputy, will meet with the following Granges in Sonoma county: Pomona, April 17th; Two Rock, April 18th; Glen Ellen, April 19th; Progressive, April 20th; Geyserville, in the evening of April 20th. They desire a full attendance at all points.

CARRIAGE EXHIBIT.

Visitors to Columbus, Ohio, can now see the greatest exhibit of pleasure vehicles, aggregating nearly 2500 forms of wheeled comfort. No admission charge, plenty of guides through the labyrinths of graceful woodwork, art iron-mongery, glistening varnish and pleasing leather effects from the Columbus Carriage and Harness Company, Columbus, Ohio. The company publish a handsomely illustrated descriptive price list which they will gladly mail free to any one who will write stating what particular style of vehicle or harness is wanted.

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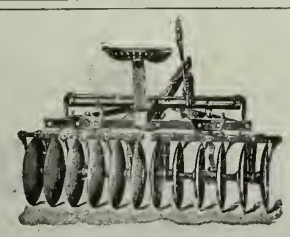

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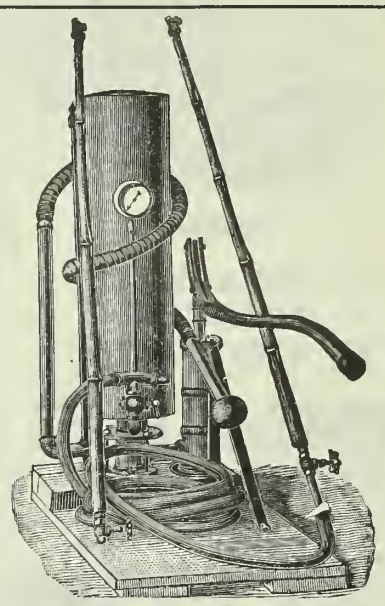

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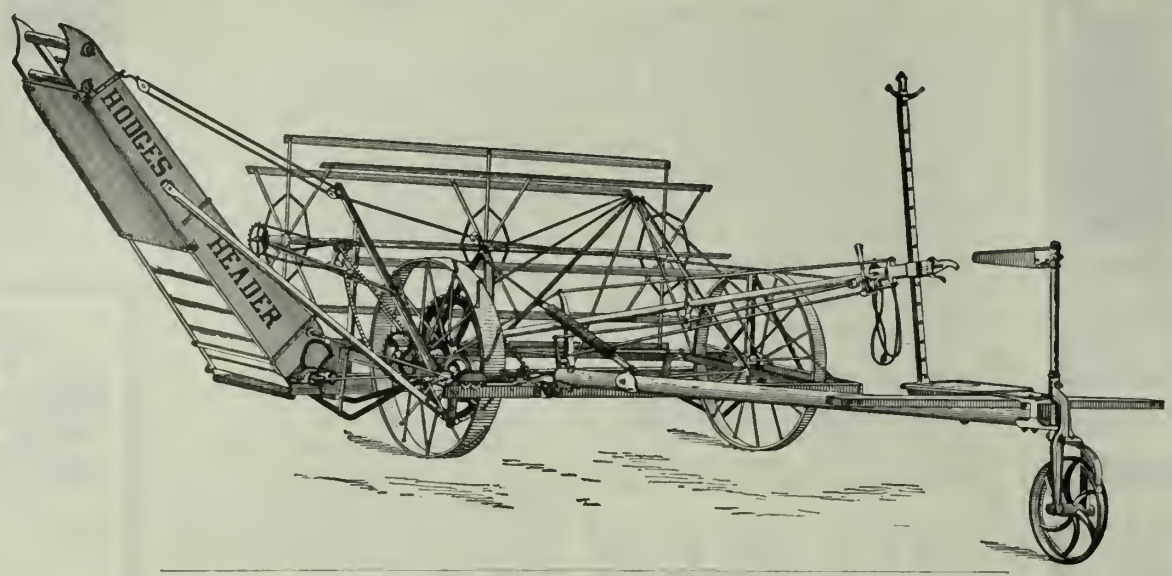

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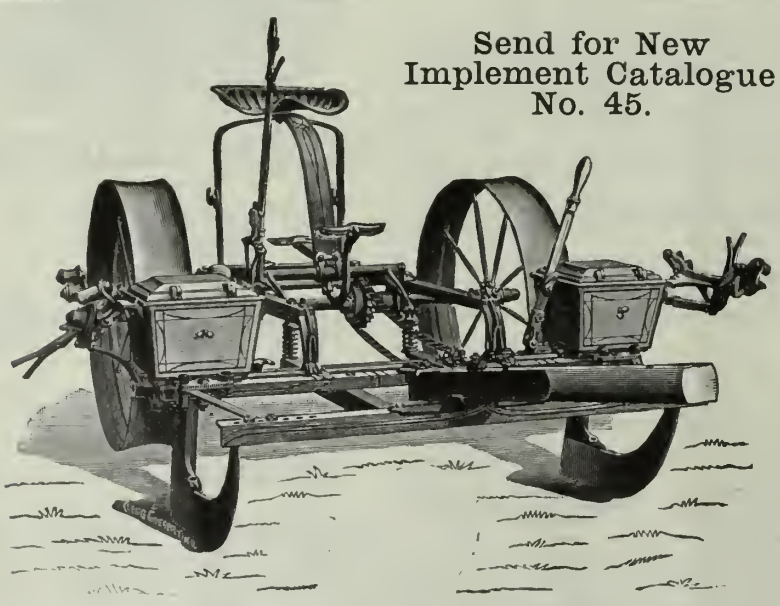

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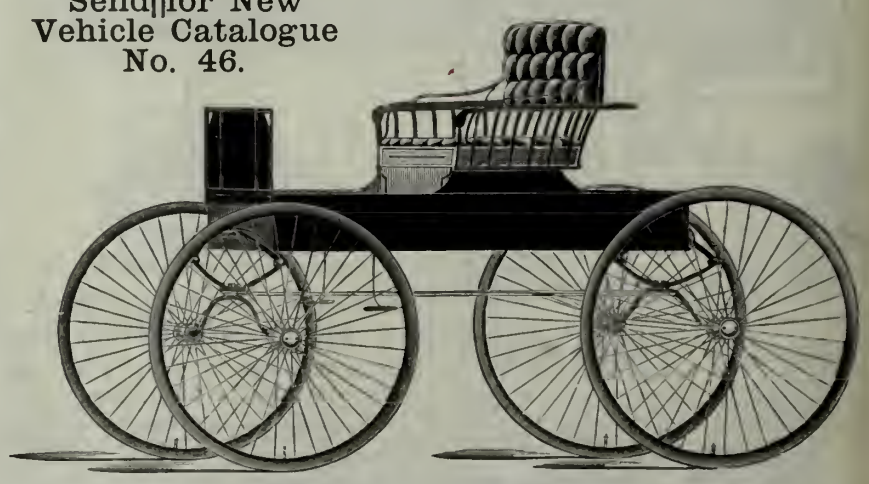


RUNABOUT WAGON.

THE PACIFIC RURAL PRESS

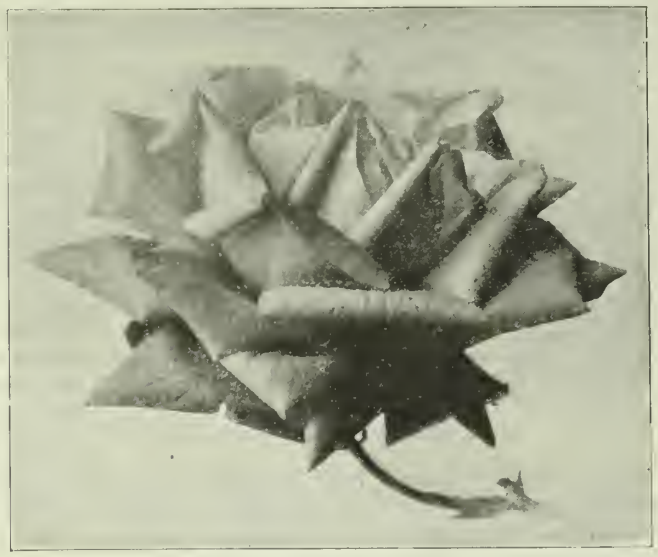
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 16. SAN FRANCISCO, SATURDAY, APRIL 20, 1901. THIRTIETH YEAR. Office, 330 Market St.

Burbank's Flowers.

We have another intimation on this page of what Mr. Burbank of Santa Rosa is doing with flowers. It is only an intimation, however, because he works in such large and various ways that even the camera can not catch up with him. He has done much with lilies and has novelties in store in this line which will occasion surprise everywhere. The large picture on this page, for example, shows a cluster of one of ten thousand hybrid lilies which have been grown on his grounds. Out of this vast multitude of hybrids the best have been selected and are now being propagated as rapidly as possible, and how fine they are the public must wait and see. Mr. Burbank is a little chagrined that one of the inferior ones, and yet a good lily, was sent out two years ago as the "Burbank lily" without consulting him. We imagine that he has so many better ones now that it makes him sad to beat his own namesake. The whole subject is very interesting, and we are now just giving it a glance and a promise.

In rose creations Mr. Burbank has done things which will endure. The Burbank rose is described by an Eastern grower as "without exception, the freest flowering rose in cultivation. The plants begin to bloom when only a few inches high and flower most profusely all through the spring and summer until stopped by heavy frost late in the autumn. The flowers are double, of fine form, nearly three inches across. The color is a deep rose pink, shading to a beautiful soft rose at the center. The petals are well incurved, so that the center is hidden. In September and October the outer petals change to a deep, rich carmine. The Burbank is perfectly hardy and will stand our most severe weather. This is a great point in its favor. It is strong and vigorous, with neat, rich green foliage, not liable to mould or spot. The plant is of symmetrical form, and does not make sparse open growth out of doors, as do so many other choice varieties. Each plant becomes a well-rounded bush that is most effective when grown at some little distance from other plants."



The Coquito Rose.

This testimony is of present importance because another of Mr. Burbank's roses—the Santa Rosa—was of the same parentage, and, though not yet as widely known, has the same record. Both were Bon Silene-Hermosa crosses. Coquito, shown on this page, is another of the same class with larger blossoms and flowers of less pronounced rosy crimson. Coquito starts to bloom soon after the cutting is rooted and attends strictly to business, whenever the weather permits, blooming in California nearly the whole year. The color is clear, deep rose. The foliage of all these new roses remains clean, fresh, glossy and healthy when nearly all others are injured by mildew and various other fungous diseases. This seems to be inherited from the Hermosa, which is notably resistant of parasitic fungi.

One of Mr. Burbank's Ten Thousand Hybrid Lilies.

It may as well be admitted that the problems in the prune situation are difficult, and now that the preparations for another year are at hand it would be well to have general discussion as to what changes in policies or methods should be adopted. The cut in price to 2 cents, noted in our last issue, seems to have excited growers to hot denunciation of the management, as they seemed to think the matter should have been fought out on the old line. According to statements attributed to President Bond, the Association had decided to do no more advertising. Already $20,000 has been expended, and this sum hardly exceeds the total receipts for the extra sales in consequence of the advertising. President Bond believes that the difficulty in selling was due to an overstock of dried fruit. Not only was the prune market overstocked, but there was the same surplus in the East and abroad in pears, apricots and apples. The Eastern jobbers absolutely refused to handle any considerable quantity of prunes at a rate exceeding a 2-cent basis. It looks very much as though something more has to be learned in the handling of the prune crop.

It is an interesting situation that, to get advantages of cheaper rates via Seattle for our oranges, the fruit must get to the water without touching the tail of the overland lines. If, for instance, the fruit goes a few miles to an ocean landing, it is under the control of that railway as the initial line, and the rate and route also are fixed thereby. This is what the president of the Santa Fe was thinking about the other day by saying that he could stop the fruit from going by sea at any time, but he let it go because growers would find the northern route otherwise undesirable. Now, if the shippers wish to get lower rates by Seattle, they will have to haul their fruit to steamer landings in southern California without using the railway. When this is done, the railway starting at Seattle becomes the initial line and can do as it likes about rates which, by the way, are said to be only about half those of overland lines terminating in this State.

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Advertising rates made known on application.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, April 20, 1901.

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The Week.

Though we have passed from beneath the cold wave noted in our last issue and reached a week of more normal temperatures, we encounter a lack of rainfall, each day becoming more acute, and are in serious danger of much hardship unless a fair amount of water should soon fall. In the drier parts of the interior valley and foothills at the close of the week we saw much very short hay being cut to prevent it from crawling back into the ground. Of course there are extreme places and the great areas are in good to tolerable condition and ready to be pushed into production by moderate late rain, but it is getting so late that growers are naturally becoming very apprehensive. It looks again as though irrigation facilities would have to be used for all they are worth to bring much of our fruit to good size, though the free thinning by frost will reduce the burden of many trees, and there will be a short pasturing season in many districts. For a season which began so fair the current weather phases are grievously disappointing.

The markets this week have few striking features, and ruling conditions are fully stated on our Market Review pages. The drouth seems to be stiffening values all through the group of feed grains, while export cereals do not follow because distant markets are too weak. Some staple vegetables seem to be forecasting the future, for beans are very stiff, because of less chances on the southern fields. Potatoes are also higher. Oranges are doing better. A fair movement is reported in prunes at the cut rate. Wool has awakened and buyers are operating freely and giving a firm market at quotations. There is active buying of light northern wools. The first overland fruit shipment for the season consisted of one box of ten pounds of Vaca valley cherries, which sold on Monday in Chicago for $10. Shipments of small fruits to the Rocky Mountain States have also been made.

The beginning of a rural polytechnic school in California is an item of wide interest and will command the approval of all who are aware of the needs of such opportunities for instruction and of the great progress which is being made in other parts of the world in their development. There will soon be, by act of the last Legislature, $50,000 available for the establishment, at or near San Luis Obispo, of an institution to be known as the "California Polytechnic School." The Governor is to appoint five persons who, with himself and Superintendent of Public Instruction, shall constitute the Board of Trustees. The purpose of this school is to furnish to young people of both sexes mental and manual training in the arts and sciences, including agriculture, mechanics, engineering, business methods, domestic economy and such other branches as will fit the students for the non-professional walks of life.

THE PRUNE PROBLEM.

A Distinguished Californian Arraigns the Management.

Just as we are going to press we receive—too late for printing on other pages—a notable communication from Hon. John T. Doyle of San Mateo county on the prune situation. The issues are so interesting and so sharply defined that we cannot do otherwise than give them the right of way in place of our customary editorial comments, in the hope that the world will manage to run around a week without our editorial propulsion. The time has come to look to the very bottom in the prune situation. Mr. Doyle shows the readers of the PACIFIC RURAL PRESS how it looks through his lenses. If others have better glasses now is the time to use them. We have discouraged criticism while the managers of the Cured Fruit Association were struggling with their great problem, because we could see no outcome of such criticism but embarrassment and confusion. Now, however, the season's work is practically done, the future course of the Association is a pressing question and criticism is in order. No one who knows Mr. Doyle would think for a moment that he is actuated by anything except a sincere desire to advance the general welfare, and his arraignment is of methods, not of men. He is a courtly gentleman of the old school and is above personal controversy. We are sure of his motives; our readers may judge for themselves of his conclusions.

MR. DOYLE'S COMMUNICATION.

TO THE EDITOR:—So large a number of your readers are interested in the crop of prunes harvested last summer that I beg to lay before them, through your columns, the following:

On the 7th of March last, having seen in the papers that the Association had resolved to sell the small prunes for $10 per ton, taking guaranties from the purchasers that they should be used only for by-products, I addressed the directors of the Association the following letter:

DEAR SIRS:—Your resolution of yesterday to sell the small fruit at $10, under guaranty that they shall be used only for the manufacture of by-products, is in the right direction, but will not suffice. People will not do business on the basis of our good intentions, for we may change our minds after they have invested their money. Still less will they trust to guaranties, exacted by us, from those to whom we sell; for they are not parties to the contracts, and even we, the sellers, cannot enforce them. The damage to us—the breaking of the market for table fruit—is too remote to recover, even if it were possible to prove it. Besides, how could it be proved that the small prunes that appeared in Eastern markets were the same, delivered by you here, under the guaranty? They cannot be identified any more than two drops of water.

If we want to recover our lost ground of the last five months, it must appear that those small prunes have been disabled from coming on the market, in competition with table sizes. For this purpose they must be passed between rollers, or otherwise made pulp of, and devoted to by-products at once. Dealers will not buy supplies ahead while those things remain prunes. Buy a drove of pigs and hire premises and a swineherd at once, or contract with some pork raiser for the delivery of so much prune pulp per day, until it is all gone, and people will probably have some faith in your intentions; but only when the whole marketable stock of fruit is reduced to what can be consumed for table use during the remainder of the year can you look for satisfactory sales. Yours respectfully, JOHN T. DOYLE.

To this I received, within a day or two thereafter, a reply from the secretary of the Association, saying that the board agreed with me in my proposition and would take every precaution that these prunes do not destroy the market value of the others.

After the lapse of a month, hearing nothing in the way of eliminating the small fruits, in accordance with the policy thus approved by the directors; but, on the contrary, learning from the San Jose papers that they were selling it at $30 per ton, without restriction as to use, I wrote the president of the Association on April 8th the following letter, which was delivered to him in person before the meeting of the directors held on that day:

H. B. BOND, President of the Cured Fruit Association—DEAR SIR: As one of your constituents, I address you in respect to our crop of prunes, grown in 1900, and turned over to the Cured Fruit Association, of which you are president and manager. The receipts from sales have been so small that I have endeavored to find out what is the matter, and I embody here the results of my investigation. If the facts or figures are in any way erroneous, I would be glad to have you correct them, and make the statements as accurate and exact as possible. If they are substantially correct, it seems to me that the members of the Association—and I as one of them—are entitled to an explanation of the causes which have led to such a disastrous result of our last year's abundant harvest. If you will kindly furnish such, I will be greatly obliged to you, and, unless some good reason for privacy is shown, will gladly make it public, in the hope of allaying the existing dissatisfaction among growers. Here are the facts in my own experience which perplex me:

Our crop of 1899 of all sizes was 128,200 pounds; that of 1900 of all sizes was 239,179 pounds; of these there were of 90s and over, 108,413 pounds (36⅔%); leaving 123,767 pounds of larger sizes.

Our large fruit of 1900 was, therefore, practically equal in quantity to our whole crop of 1899; so that had we obtained for the former the same price per ton that we got for large and small the year before—$65 per ton—and sold our small fruit, as mash for base uses, at $10 per ton, we should have received $4020.25 for our large fruit and $532 for the small fruit, making in all $4552.25, less 2% for the Association ($91.04), leaving us $4461.21 net. In 1899 the proceeds of the crop were $4160.32, being $300.89 less than this sum. But then we delivered the prunes within a mile of our own door, had our money in hand on Oct. 7th, and the middlemen—to whom we parted with them—sold them at a profit of probably 20%. This season we have received $1383.51 down to the present date, with we know not what prospect of anything further. Such are the results of our increased harvest under the management of the Cured Fruit Association. I have some reason to suppose that our proportion of large fruit was something above the average; but, assuming for the present purpose that our prunes were average in size, I make the following figures on the whole product of the season:

The whole crop of this State and Oregon for 1900 is given at 180,000,000 pounds; of 90s and over (36⅔%), say, 65,080,000 pounds; and of large fruit (63⅓%), say, 114,920,000 pounds.

The whole crop of 1899 is set down at 120,000,000 pounds. So that, on these figures, if the Association had at the opening of the season honestly condemned all small prunes to the pigs or to the still, so far from being embarrassed by a surplus crop, we would have been a little short of the quantity actually sold in 1899; and as the fruit would have been of larger size than the latter crop, we might have got a trifle more per pound for it, besides selling our small fruit—as mash at $10 per ton—for $329,900. In answer to this suggestion I have been told that in 1899 we exported 12,500 tons to Europe, and that our sales there this season have been only 2500 tons. Assuming this to be correct, we would have had this last season a surplus over the crop of 1899 of only 14,920,000 pounds, which the natural increase of the population and consumption and the larger sizes of the fruit would have easily disposed of. Even if it remained on hand to back up the crop of 1901—which must in the ordinary course of nature be less than that of the preceding year of abundance—it could have done no harm.

Now, if I am correctly informed as to the above figures, it appears undeniable that it was a great pity that we did not, at the commencement of the season, adopt the policy of eliminating the small fruit and selling it at once, as mash, for base uses; I think it "in order" to ask an explanation of why that was not done? There was nothing secret about the magnitude of our crop, nor of the fact that Europe had also an unusually large one. You gentlemen, our directors, knew our crop accurately, or said you did, for you announced your decision to put the plan into operation because you had secured a certain percentage (85% or 90%) of the whole, and if you knew that you had secured a certain percentage of the whole crop you must have known how much the whole was. You also knew the exact proportion of each size that was to make up the whole, and a very easy calculation would have shown, in advance, the results I have given above, and the omission to adopt so obvious a policy seems unaccountable.

The above figures, even if approximately correct, illustrate the folly of holding our small fruit, instead of promptly condemning it, to form base by-products. As long as that small fruit remains on our hands, capable of coming on the market at a future date to break down prices, no dealer dare undertake to carry a stock of prunes; and purchases were necessarily only made from hand to mouth. We were therefore carrying the whole stock through all the winter months. It is also said that we refused to give to large wholesale buyers any advantage in price over small customers who took a carload or two, and even made no effort to sell; but, holding so nearly the whole crop in our hands, fixed the price and waited for buyers to come to us! If this be so, it was surely a great folly. You were chosen president of the Association because of your supposed large business talents. But I fail to see that any great business talent, or talent of any kind, was needed to sit down and wait; especially where, as in this case, while we were sitting and waiting the outside holders, who refused to join the Association, entered the market and by making a trifling reduction from our published prices, have sold their fruit while we are holding ours and keeping the price of fruit up for their benefit.

I wrote the directors not long since, pointing out that while our small fruit retained the form of prunes, it constituted a standing menace to the market, and would prevent the trade from buying, except from hand to mouth; hence the necessity of putting it out of the power of any one—even ourselves—to sell it for table fruit. I received a reply from the secretary to the effect that the directors agreed with me in the opinion. I have, however, heard of no such thing as making mash of the small fruit, and the Chronicle of yesterday announces that we are taking orders and selling it at $30 per ton. Of course every ton of it so sold prevents the sale of an equal quantity of the larger fruit at a better price.

The air is full of reports adverse to the management of the Association. I beg to suggest to you the expediency of a full and frank statement by the directors of their whole proceedings since organization. If we lose the bulk of our crops, let the producers at least have the benefit of the experience they have paid so dearly for. Very respectfully yours,

JOHN T. DOYLE.

To this letter I have received no answer, and, after vainly waiting a week for one, I feel justified from Judge Bond's silence in assuming that its facts and figures are substantially correct, and they undoubtedly show very bad management on the part of the

directors of the Association—a charge which other facts now brought to light fully confirm. The San Jose Mercury, no unfriendly critic, has contained several communications and other matter evidently derived from headquarters and stated so as to be as little censorious as possible. From this source it appears that a contract for co-operation was made between the Cured Fruit Association and the Packers' Co., the details of which are not given, further than that the control of all sales of prunes was given to the latter concern and that of prices was reserved to the former. All the particulars of this contract must have been known to Judge Bond, the president of the Cured Fruit Association, who may be assumed to have signed it himself. The latest revelation about it is that, during his visit to the East, he crossed over to Europe and there arranged for the sale of 300 carloads of prunes—price and terms not made public—and was only prevented from consummating it by the fact that he was reminded by the Packers' Co. that he had no authority whatever for the act! The way the story is told in the Mercury of Friday, the 12th inst., would suggest that to claim the fulfillment of its contract was deemed by the management a great hardship on the Association. Following on this disclosure there appears to have been an angry scene and offensive language between some of the parties, and this morning's Mercury announces that the president of the Packers' Co., for harmony's sake, has resigned. The Packers' Co. now formally deny Judge Bond's statement.

These details are from my present purpose. It seems to me that the cardinal blunder in the management of the business was the attempt to uphold prices against a glut in the market, without providing a sure outlet for the surplus. With 30% more prunes on hand than the market would naturally take, how could any one expect dealers to lay in stocks without knowing to a certainty what was to become of that surplus? They were, of course, told that there would be no reduction in price, and that the surplus would only be sold for by-products. But they knew the world better than that. They feared that our poverty, if not our will, would consent to a change in this programme and their anticipations have been verified. We have reduced the price of prunes, and the small fruit is being sold for table uses! Had this latter been promptly, at the opening of the season, consigned to the still or the sty, there is no reason why the rest of the crop should not have brought fully last year's prices. But for us to hold that mass of small fruit in the form of prunes was simply to reserve the power to throw them on the market, when we had sold the rest of the crop to compete, at greatly reduced prices, with higher priced goods in the hands of the dealers. The latter, however, were not simple enough to buy under such circumstances, and that is in the main what is the matter. We have made many other blunders, but that was the chief one and led up to the others. The attempt to rally the market by extensive advertising was childish. People who ate 120,000,000 pounds of them last year knew pretty well what prunes are. The resolve to reduce prices for a fortnight only is about equally so. You have shown the dealers that they can force prices down by holding off, and to attempt to restore former ones will simply stop sales. The poor growers have probably received all they are going to get out of last year's abundant crop, and may consider themselves lucky if they escape a demand for something in the way of refundation; for some have received nothing so far, and the distribution among the rest has not been equal.

A meeting of the members of the Association is called for a fortnight hence. At it, we are told, we may choose between continuing the Association and breaking it up. I wish to suggest to my fellow sufferers that there is another alternative. The operations of the past year have been a failure—a bad one. But it is not the Association that has failed, but the management. Let us continue the Association, but select more competent officers. We should begin to cast about for such at once, and let every member who believes he knows a competent person mention his name. I confess that I have no one in view myself, but there must be more than one man obtainable competent to manage such a business, and they are probably known to many of the members.

Menlo Park, April 16, 1901. JOHN T. DOYLE.

QUERIES AND REPLIES.

Spraying for the Codlin Moth.

TO THE EDITOR:—When should the first spraying be done for codlin moth and how long afterwards should the second application be made? Some say two weeks. Is not that sooner than necessary?—READER, Sacramento county.

This matter has been quite fully discussed and there is some difference in belief and practice because conditions are such that it is not possible to demonstrate the thing exactly. If we knew just when the moth would appear, it would be easy to be exact about the prescription. Experience shows that the apple blooms and the fruit sets, in some parts of the State at least, at a temperature too low for the free appearance of the moth. The fruit grows and the calyx may close before the worm hatches from the egg which the moth lays anywhere on the fruit or on adjacent leaves. In nearly all cases, however, the first brood of worms enter the fruit by the calyx route. It is necessary then to get the poison into the calyx cavity before the sepals close over it, because the worm can get through them but the spray is often shed by them. Therefore spray first as soon as the petals have fallen so as to have the poison in place. In places where the spring temperature is warm and the growth of the young fruit rapid, as it is apt to be in the interior, it is a safety proposition to give another spray in about two weeks from the first and the third about two weeks from the second. These are all aimed chiefly at the first brood of the worms from early and belated moths, for they do not all fly at once, though the third spray will stay on the fruit so as to be ready for the early worms of the second brood. In cool situations on the coast the first spray should be whenever the fruit drops its blossom-petals so as to get into the calyx, but the second may be about three weeks away from the first. In the interior the chief product of apples and pears are of early varieties and successful treatment of the first brood will practically save the fruit. On the mountains and on the coast where the development of the insect is belated and where later varieties are largely grown spraying again at three or four weeks from the second, aiming to strike the touching sides of the fruit, for the later broods do not give such full attention to the calyx as the first does. Some spray four or five times, keeping to a two to three weeks interval. We cannot give a perfectly satisfactory answer to a variable problem and some growers may not quite agree with the outline we have given. We would probably dissent also if we had their experience. The whole matter is for close observation and adjustment in accordance therewith.

As for preparation of the spray, which some new readers may not have noted yet, we give the following from a timely slip just issued by the Horticultural Commissioners of Sutter county:

Paris green, one pound.
Lime, five pounds.
Water, 200 gallons.

Slack the lime in about five gallons of water and after it has settled draw off the water and use with the Paris green. Make the Paris green into a paste before adding to the water.

Make the first application just after the blossoms have fallen. The second spraying should be done about two weeks later, and the third spaying two weeks after the second.

When purchasing Paris green, demand a written guarantee of its purity of your dealer, and send a small sample of the poison to Prof. E. W. Hilgard, State University, Berkeley, Cal. The sample will be promptly analyzed without expense, and a report made to you. Unless the Paris green used is of the proper quality no beneficial results will be accomplished, and time and money will be wasted.

Keep the mixture thoroughly stirred while spraying, as the Paris green is not dissolved and must be kept in suspension by agitation. The spray should be fine and should be applied thoroughly over the entire tree. Stock should not be allowed to graze under the sprayed trees for fear of poison.

It is well enough to add the last precaution, perhaps, and yet if the Paris green is applied not in a shower but in a fine mist and stops before it collects and runs from the tree there is no appreciable danger of poisoning stock. In fact, experiments long ago with stock feeding under sprayed trees showed no injury. We have never heard of a case of poisoning in this way.

Pruning Cypress Hedges.

TO THE EDITOR:—When is the best time to prune Monterey cypress hedges?—HEDGE ROW, Oakley.

There is no best time agreed upon by pruners for the pruning of the Monterey cypress hedges. The usual custom is to prune whenever the new growth has started out to such an extent that the hedge is rendered unshapely and unsightly. That is probably as good a time as any, and the repressive effect of pruning at that time would be at its maximum, which is a desirable point in hedge growing. If there should be a necessity of severe pruning—that is, cutting back behind the new growth—it would be better to do it during one of the dormant periods and just before the starting of the new growth.

An Apricot Cutter.

TO THE EDITOR:—Is there a reliable apricot cutter and pitter to be had in this State?—H. O. YARROW, Oakley.

We do not know of any machine which will give the clean cut necessary to make a first-class dried apricot. If any one has such a machine it should be freely advertised, for there would be a great call for it. There are machines which will punch out the pit and half the fruit, which work very quickly and would be available for pitting for jam, but this treatment does not make high-priced dried fruit of any kind.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 15, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather has been warmer than during the preceding week and no severe frosts have been reported since last Monday. Dry northerly winds have prevailed and as no rain has fallen during the week the soil has become very dry. Late reports from the fruit districts state that while considerable damage resulted from the frosts of last week the loss will not be as heavy as then estimated. In portions of Placer county there was no injury to fruit, and the orchards on the Sacramento and American rivers were not seriously damaged. Good crops are expected in those sections. The first strawberries from Placer county and the first cherries from Solano county were shipped on the 11th. Grain is still in fair condition, but rain is needed.

COAST AND BAY SECTIONS.

The temperature has been above normal during the week and no severe frosts have occurred since the 9th. The continuance of dry winds and absence of rain are seriously affecting crops in some sections. Early wheat is in good condition, but the late sown and pasturage need rain very soon. Barley is heading out. The hay crop will be heavy. Deciduous fruits were considerably injured by frosts during the preceding week, although some sections report that the loss will be very light. Apricots, peaches and almonds appear to have been most seriously affected, but in places prunes, grapes and walnuts were seriously damaged. The orchards on high lands suffered less than those on the lower lands.

SAN JOAQUIN VALLEY.

Generally clear weather, with warm days and cool nights, accompanied by dry northerly wind, has prevailed during the past week. Frosts occurred quite often during the early part of the week, severely damaging almonds and apricots, and in some sections vines. Peaches were damaged considerably in some localities, but a fair crop is expected. Other fruits were but slightly damaged. Rain is badly needed in all sections. The ground is generally too dry for the cultivation of orchards and vineyards. Early sown grain continues to look well in most sections, but the late sown is generally suffering for rain. Grain is heading out in some places. Haying will commence next week and a good crop is expected. Alfalfa is doing well. Stock of all kinds are healthy and in good condition. Green feed continues plentiful.

SOUTHERN CALIFORNIA.

Nearly normal temperature has prevailed during the week. No severe frosts have occurred and no rain has fallen, except a light shower in San Diego county. Early sown grain continues in good condition, but the later sown must have rain soon to insure a crop. Haying is in progress in some sections; the yield of hay will be heavy. Apricots were seriously damaged by frost during the preceding week in Santa Barbara county and other places. Lemons are on market in San Diego.

EUREKA SUMMARY.—Conditions are more favorable for growth of grain and indications are for heavy crop. On high lands fruit and early vegetables somewhat damaged by frost, but in valleys no material damage was done.

LOS ANGELES SUMMARY.—Frost damage last week was not general. Apricots, walnuts and vegetables were injured in some localities, in others not. Apricots are practically a failure; peaches promise well. Haying is in progress; early sown good crop, late sown drying up.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 17, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.00	44.49	47.31	42.05	40	62
Red Bluff	.00	22.67	20.56	25.48	48	82
Sacramento	.00	17.50	16.40	19.67	46	80
San Francisco	.00	18.99	17.89	21.98	44	62
Fresno	.00	10.33	7.36	8.55	42	82
Independence	.00	5.80	2.81	4.52	40	78
San Luis Obispo	.00	27.88	15.26	16.58	34	80
Los Angeles	.00	14.17	5.71	16.95	44	72
San Diego	T	10.55	3.41	9.31	50	62
Yuma	.00	3.60	.79	2.87	42	92

FRUIT MARKETING.

Thoughts Suggested by the Prune Situation.

By LEONARD COATES, at the Napa Farmers' Institute

I will not venture to discuss the prune question at any great length, but chiefly to attempt to draw some lessons from the situation and what has led up to it, which may be applicable to farmers in this locality. A clergyman once preached a sermon from the text, "Top not come down," alluding to a fashion of dressing the hair at that time. It might puzzle the closest student of Scripture here to-day to find this passage, but in its entirety it sounds somewhat different: "Let those who are upon the house-top not come down." The only connection between this and prunes is that my subject is scarcely more relevant to the remarks that follow.

A cursory glance at the situation, however, will be necessary. You all know what that situation is. A peep into any prune house and then an examination of your purse will show that the condition of the two should be reversed—the purse should be full and the warehouse empty; but, alas, it is not so.

THE CAUSE.—If asked to give in one word the cause of all this, that word would be "overproduction." But that does not state the case with absolute fairness; it needs qualification. This overproduction is, first, temporary, and, second, unnecessary. The first is easily capable of demonstration; the second sounds paradoxical. "Overproduction" is "temporary" because out of a population of 75,000,000 not 10,000,000 eat prunes, except an occasional taste. It is "temporary" because we have produced an unusually large crop, coming into competition, not only with an immense general fruit crop all over the United States, but also with an exceptionally heavy European prune crop. It is "temporary" because of a spirit of antagonism shown by dealers when the producers evinced an inclination to organize. It is "temporary" because of the presence of double-tongued traitors, ever ready to espouse either the cause of the farmer or the dealer, according to the nature of their listeners. It is "temporary" because of the greed and selfishness of those locally who, in order to make a few dollars to-day, and not being dependent upon a prune crop, have bought and sold prunes "outside" of the Cured Fruit Association, and which, if defeated, would practically ruin California's best and hitherto most promising industry. The more so are these last to be condemned, because it was in their power to influence and coerce others who were under financial obligations to them, or who were unable to resist or refute the plausible arguments set forth.

Overproduction is unnecessary, in that it only exists because of adverse conditions which may be removed. These conditions I alluded to when I said that probably only 10,000,000 out of 75,000,000 of the population of the United States were actual prune consumers. The California Cured Fruit Association is now wrestling with the problem of how to remedy this state of affairs. The Association is on the right track. Advertise and popularize must be the war cry henceforth. That is the sure road to enormously and continuously increased consumption. Let every interested individual do missionary work, and begin at home. I do not suppose there are 100 people in Napa who have any idea what sort of article a prune is as packed by the Association's authorized packers; that it may be—and should be—eaten out of the box without any preparation, being perfectly soft, tender and toothsome, and that such fruit at 4 cents and 5 cents a pound is as fine and delicate as the goods known in Europe and New York as French plums, and which sell at 25 cents to 35 cents a pound.

THE ANSWER.—Recognizing and appreciating all of this, as most of you will, there still remains the practical application, the answers to those ever-important questions: "What shall we do?" "What will pay best?"

In some parts of California there are certain crops which are pre-eminently a success. When this is the case, as, for instance, about Oroville, Butte county, where the orange, lemon and olive thrive, it is perhaps the better policy to give such the preference.

The advisability of specializing is becoming more apparent year by year. While in places some crops are a marked success, others are an equally signal failure. Because oranges may be grown anywhere in Napa county, it does not follow that a citrus grove would be a success, financially. Indeed, any one who should contemplate such a scheme would be a fit subject for an insane asylum. It is all a matter of comparison. Suitable lands in the Sacramento and San Joaquin valley grow the finest peaches, commercially, and yield more to the acre than elsewhere. But, in the same great valley, there is no spot where a first-class prune can be raised. Good land at $25 to $50 per acre is capable of producing wheat profitably. Above that valuation it becomes a very uncertain and unsafe proposition, except where intensive farming is understood and practiced. To farm intensively is to increase the yield by a thorough understanding of the theory and principles of agricultural science, according to the degree of capacity of a given soil. A poor soil may be improved, but it can not be made equal to a rich one. Worn-out soils and those which have been overcropped can be brought back to their original state of fertility.

The chief aid to this restoration of California soils is nitrogen, which was formerly very abundant, but which has been drawn from the land by the ruinous system of farming practiced to such an extent that, unless it be returned in some way, our soils will become less and less productive until they will be forced into rest solely because it will not pay to farm them. Nitrate of soda is the form in which nitrogen may be most readily applied. The other properties which are most essential to plant life are phosphoric acid, potash and ammonia; but it is not the purpose of this paper to dwell upon the subject of fertilizers. I mention nitrogen for two reasons, one of which is that it should be used at this season of the year, being assimilated by the growing crop during the summer months. Cultivated in with a crop of corn, potatoes, sugar beets, when the plants are well up, or in the orchard, especially where any lack of vigor in the tree is noticeable, immediate results will be had that will demonstrate to the most skeptical the practicability and profitableness of the operation. The mistake has so often been made to apply nitrate of soda too early, while the land is wet. In this case it is rapidly leached out and wasted. It must only be used when the roots of the plant or tree are most active, which is during the early growing season.

SMALL FARMS—LARGE PROFITS.—There is an axiom in agriculture which I will try to put into few words. The whole philosophy and economy of farming hang upon it. It is this: The richer the land and the smaller the farm, the greater is the proportionate profit. Inversely, the poorer the land and the larger the acreage, so is there proportionately less profit. Here is the great distinction from a purely commercial standpoint between farming and all other business pursuits. A farm is practically incapable of unlimited extension under one head because of the direct dependence upon the weather, and because of the perishable nature of the product.

The apparent inability of farmers to organize in their own defense adds another feature to this line of demarcation, the products of the land being merely, so far as the producer is concerned, a speculative commodity, enriching middlemen and transportation companies at the expense of both producer and consumer. Intensive farming on a very large scale is not practicable because other lines of business offer greater profits in the capital invested.

To illustrate by a reference again to the prune, statisticians tell us there are 10,000,000 prune trees in bearing in the State. A Santa Clara authority says that 150 pounds to the tree is a fair average, or about 65 pounds dried, which would give us 650,000,000 pounds to dispose of, instead of 150,000,000. Observation will show that the larger the orchard the less the proportionate yield, and a closer examination will reveal the fact that the expenses are proportionately greater, by reason of a certain leakage, or items indescribable charged to profit and loss. Lack of individual care is one reason, and there may be others. It is doubtless in recognition of some law of nature that we should give heed.

MIXED FARMING.—An orchard as such, and alone, is a mistake, as is a wheat farm, or a vineyard. Either or any of these is a failure as a speculation or as a source of income—a twentieth century chimera. A farm should be as diversified as possible in the nature of its products. Too practical men will question this, yet very few practice it. Take a fifty-acre farm as a basis, which, consisting of good land, is enough for any ordinary, frugal family. Divide it into fifths—ten acres for orchard, ten acres for vineyard, ten acres for alfalfa, ten acres for hay and ten acres for corn, grain or other crop. The last three divisions should be farmed in accordance with the principles of crop rotation, of which alfalfa, grain, corn, hay, would be a wise exemplification.

Alfalfa is a crop which should not be omitted. Twenty-five years ago it was no unusual thing to see alfalfa fields all through the valley, and the seed then cost 12 cents to 15 cents a pound. Why is it given up? The answer universally is that "It does not pay." The usual method was to cut two crops for hay, and immediately after the second crop was hauled to turn in an almost indefinite amount of stock—horses at $3 per head per month and cows at $2. Now, if the pasture had consisted of morning glory, no more effectual effort could have been employed for its complete eradication. Instead, let one crop be cut for hay, where the alfalfa is not irrigated; then let it grow up and be well in flower before stock is turned in, and take all the stock off before it is eaten down too close, allowing it to recuperate again before the winter.

Incidental and appertaining to such a farm would be several cows, a drove of hogs and poultry yards—all, or their product, good for exchange for cash, and everything they eat being raised at home.

The alluring mathematical proposition, "If one prune or peach tree bear 150 pounds of fruit, at 1½ cents a pound, what will be the income from fifty acres of such trees at 100 trees to the acre, after deducting so much for expenses?" has been the ruin and disappointment of many. And not so only with fruit. I am told that farmers will not take good offers now for their calves or young stock, figuring that if one calf is worth $10, five calves will be worth $50.

The common practice of annual renting of farms is to be condemned. A farm rented on a short term means loss to both lessor and lessee. Fences and all like improvements fall into decay; ditches fill up, and the whole place soon assumes an air of desolation and poverty. Such a farm may be noted by even the casual passerby, and it acts as a menace to the prosperity of the community.

REFORMS.—As a means to our end, the Grange, farmers' institutes and all associations having for their object the organization of farmers should be encouraged. The Grange is doing a grand work and has enrolled among its members many of the best men of the land. May I venture to suggest that, if it err, it is sometimes in aiming too high, in attempting reforms, political and otherwise, as yet beyond its strength to carry out?

A farmer out of debt is an independent man, freer and more independent than a Rockefeller or a Vanderbilt. A farmer in debt, under financial obligations that may crush the life out of him, some of you know what he is. Rather than spend money in trying to elect a President or a Governor—possibly merely to flatter the vanity of a man not half so good as you are—help your brother on his feet first; urge him to sell a half or four-fifths of his farm, if necessary, to pay his debts, even if it leave him but a ten-acre home. Far better would this be for himself and the country. In union there is strength, but there is no strength in the union of weakness. Get strong—personally, individually. Then, united, you will be a real power in the land.

Let the Grange help you buy in the cheapest market by inaugurating more co-operative stores on the Rochdale plan. You must do these things in self-defense. Apparently the Government and the dollar—two words dissimilar, yet closely connected—are arrayed against you. I say, do these things in self-defense. Farmers are no better than the majority of other people. We preach the Golden Rule, but do not always practice it. If we were merchants or bankers and thought it to our interest to buy prunes (on the outside), and seek to disparage the Association, we should probably do it; but, being farmers, if our eyes are open, we do not think so, and those who do are our business enemies.

Finally, to those who are prune growers I would say: Do not go back on the Cured Fruit Association; if you have not joined, seek to do so now. Success is in sight; one more pull, all together, and we will demonstrate our ability to market our crop, if need be, independently of any brokers or middlemen.

THE DAIRY.

The Dairy Cow.

By T. J. STEPHENSON at the Courtland Farmers' Institute.

This cow may be of any of the dairy breeds or of no particular breed, simply a dairy cow, but if she be a dairy cow, some one has selected her ancestors and given them careful training in milk production.

When a dairy cow owes her superiority to the skill of the breeder she is usually a fine animal and possesses, in addition to her milk-producing qualities, the merit of being ready to transmit to her progeny the improvements which the skill of man has been able to develop in her.

AN IDEAL COW.—I would have my ideal dairy cow not an over large animal—say in weight only about 1000 pounds. In her I would have all the femininity possible as contrasted with masculinity. She must not be disposed to get fat, because if she cannot put on fat all that she eats will be converted into milk as there will be no other place to put it. The udder may run well up, or well forward if it be over large, or not. The thin neck and long tail and such points are to me points of excellency, but too much value must not be put on these points by themselves. It is sufficient to know that the cow gives large quantities of rich milk and is a persistent milk-giver. Yet I prefer the thin neck and large udder for the reason of the motherhood. The better and more affectionate is the cow mother the better the milk cow.

My ideal cow is very apt to be a nervous animal. It is a question of nerve power, and that is something food will not produce, only maintain. My ideal cow you will find with very bony head and strong jaw, long between the eyes and nose, with broad muzzle. She should have a bright protruding eye. Why do I want the bright eye? Simply on account of her brain power. It means strong nervous force, and that means action later on. I want a thin neck and retreating brisket. The lines above and below must not be straight or she will steal from you. I want her slightly depressed behind the shoulders, with sharp chine. I do not want too straight a backbone.

She must have large organs of production. I want her wedge-shaped. I want two wedges—large in the rear and large heart-girth: that is, wide between forward legs and sharp on shoulders. This gives the animal large heart action and the strong arterial circulation, so much needed.

Then last, but not least, she must have a good

udder, for most of the value of our dairy cows lies in their udders. She must have good teats, because whenever I am so fortunate as to have this ideal cow of mine it is going to be a matter of some labor to milk her. I have not as yet made up my mind just how much milk the cow is to give, but I will assure you that it will be a whole lot.

Cow Life.—There is no greater problem existing to-day than this same dairy cow. She is a good subject for a study: with her we have reproduction of life and motherhood; life with its pleasures and its cares. We often see the cow showing every indication of contentment, seemingly enjoying all the good things of her cow life. This is the way I would like that ideal cow of mine—at all times enjoying herself.

When the dairy cow that is markedly superior to her class is found she is usually an animal raised under the best of environments, often that of the small dairy farmer, whose wife and children milk and pet her until she is almost human in her affections, and this petting is a good thing and it tends to lengthen the milking period.

My idea of a dairy cow is a special purpose dairy cow, a cow bred and developed for the special function of producing a large quantity of good milk; a cow with a dairy type and temperament whose normal function is to convert feed into milk rather than into flesh; a cow whose temperament finds expression in persistent milk-giving.

Points to Hold in View.—Intelligent, businesslike dairymen soon appreciate the fact that milk is in a sense a machine-made product and that when it comes to making good milk at a profit the main factor is a cow with characteristics specially adapted to milk giving. As all the dairying in this section of the State is being conducted for a profit, the question arises as to how this profit may be brought about:

First, bear in mind the fact that dairy temperament is the essential thing in a profitable milk cow. "Very good," you reply, "but you cannot see the quality which you call temperament; that is some intangible thing which cannot be seen."

Yes, but the type or form is only the outward manifestation of the temperament. The type indicates the capacity of the cow to perform. Individuality determines the capacity and type is of more significance to the practical dairyman than pedigree.

Second, the food for the cow must be of a milk-producing quality and at the same time it must be a low-cost food. The alfalfa on our low lands that grows without irrigation seems to answer the purpose of a milk-producing food that can be fed at a profit.

Feeding Alfalfa.—At my dairy the alfalfa grown on the place is the only feed that I use. In the spring time, as soon as the alfalfa is far enough advanced to cut, I cut it with a mowing machine and feed the cows both night and day, giving them all they will eat.

For the feeding place I use two small fields near the milking corral. Each morning after milking, the cows are driven into one of these small fields and the green alfalfa is fed to them there by putting the feed onto the ground.

To avoid the waste of feeding on the ground, I have just completed making fifty large feed mangers for this field feeding, but I have not as yet tried them.

The freshly cut alfalfa is allowed to remain in the field from one to two days before feeding, otherwise it would bloat the cattle. If the alfalfa is in bloom it may be fed the same day as it is cut.

The first feed the cows get in the morning is at about 9 o'clock A. M. to 10 A. M. The first feeding finishes then. An afternoon feed is brought from the field to the feeding lot before noon, but distributed at about 2 o'clock P. M.—being a light feed before milking time. The feed for the night is put into the night-feeding lot each day before noon—between 10 A. M. and noon.

The men who do the milking also do all the feeding of the dairy cows, completing all by noon time each day, except unloading the afternoon feed. This afternoon task of unloading the afternoon feed the men take by turns, two men doing it one day; then these two men do not help with this afternoon feeding until their turn comes again, say once about every three days.

During the day of twenty-four hours a cow, as near as I am able to estimate it, will consume about 100 pounds of this green alfalfa, and each cow drinks about 100 pounds of water. This subject of water for the cow is of so much importance, and in fact a necessity, that it is difficult to form even a faint idea how often it is overlooked or neglected. About 87% of milk is water, and if the cow's supply of water is limited the milk yield is proportionately reduced.

Culling Cows.—What is the best breed of a dairy cow? The vital question is not so much which is the best breed as which is the best individual. Pedigree without performance is delusion. Many dairy farmers are keeping in their herds cows which are of no special breed. It is because the personality of the cow, not the breed of the cow, determines the price the farmer receives for the feed which the cow consumes.

I weed out my cows two or three times during the year, picking out those that prove to be good milkers and those that have gone wrong in some way. There is losing of teats, or the milking glands may go wrong, or the cow may get sick. In some of their ailments we are able to help them with treatments of different kinds, and again I do not try to treat them but destroy the animal, burning the carcass.

I weed out about one-fifth of their number each year, one cow in about every five or six going out; and to keep up the herd I try to raise from forty to sixty calves each year—always selecting from the best cows. This weeding out of the poorer members of the herd ought to be done more scientifically and more rigidly than I do it.

Testing Cows.—As yet I do not weigh and test the milk of each individual. I would advise that this be done, and weed out accordingly. But in making this test do not deceive yourself. Weigh the milk for the whole of the milking period. One day in each twenty days ought to be sufficient.

What has prevented me most from carrying out the individual record of each cow is the numbering or naming of them. I would like to procure a number large enough to be plainly seen from where the milker sits when milking to the right ear of the cow. This sort of a marker I have been unable to find.

I believe that in our large herds an individual test may be made in the following manner: First, number the cow, numbering the whole herd; second, register her time of calving; third, one day in each twenty days weigh the morning's milk. To do this have a weighing bucket and scales at the milk stand. Pour the milk from the milking bucket into the weighing bucket and take your sample immediately, and pour the sample into the sample bottle bearing the same number as that of the cow. Have as many sample bottles as cows in the herd. By putting corrosive sublimate tablets into the sample bottles the samples will keep in proper condition to be tested. After taking your sample weigh the milk, making the entry in a proper book on the day made and opposite the number of the cow. Repeat this in the evening with the same cow. Thus the record is made, all except the making of the Babcock test for fat per cent.

If a man is milking a string of cows he will have a steady routine task of one cow from which to weigh and sample the milk each day. This would be no laborious task, and as it would be a steady thing so the milker would not overlook his task.

If the man milked ten or twenty-five cows for his string, I would make the daily weighing for each cow ten days or twenty-five days apart as the case may be. By practicing this we could improve our dairies much faster than we are doing.

Dehorn the Cows.—Dairy cows are also better for dehorning. Last fall all the cattle on my place were dehorned, even to the calves over four months old. All did well except the very young calves. I do not know whether it was losing the horns or if it was an off season for calves, as some of my neighbor's calves did poorly with their horns on. After this I think that I will let the heifers go until just after the first calving before removing the horns.

The Profits.—About the profits of dairying, I will say that they are not large, especially at this time, with butter extras selling at 16 cents. For three months in each year, March, April and May, it is difficult to make the large dairies pay expenses, but during the remainder of the year the remuneration is usually satisfactory. But even if the dairy cow is unable to make any of us millionaires, she is a good commodity to have, as every large or small farmer who owns and properly cares for his cows will surely pay his doctor's bill and have some comfort in his home that he would not have if it was not for this same old brindle dairy cow.

THE POULTRY YARD.

Healthy Chicks and How to Raise Them.

A. Warren Robinson tells the Napa Register that, given a good incubator, or reliable setting hens, it is not a difficult matter to hatch strong, healthy chickens. But, in all this, one needs to take care that all the many details are well looked after. To hatch chicks is one thing, to raise them is another. Hatching is not half the battle. The food and drink, the temperature necessary for good growth, besides many another matter, must be carefully considered, if success is attained.

Very many little chicks are killed by kindness—they are fed too often and too much at a time. Often they are fed when too young. They do not need any food for the first two or three days of their lives. For their first ration a most excellent article is bread crumbs, moistened with sweet milk, squeezed perfectly dry. In a day or two give rolled oats or pinhead oatmeal. Cracked wheat, or coarse ground Egyptian corn after the first week or two, will make them grow surprisingly.

Do not be in a hurry to give them drink of any kind. They will get along nicely for three or four days without water, especially if they are given bread crumbs, moistened with milk. The little things will do very well indeed if sweet milk is used instead of water. Whatever is given them for drink, by all means do not allow them to get their feet in a dish. Keep the young chicks dry and warm, feed correctly and you are quite sure of success.

Be sure all the food is given them in a dry state, or as nearly dry a condition as possible.

Three necessary conditions in raising chickens are warmth, absolute dryness and proper feeding.

From start to finish constant care must be exercised. Carelessness in one minor detail may result in irreparable loss. There will always be some loss the best one may do. Those longest in the business always have something to learn. Here patience is needed if anywhere.

After the chickens have graduated to the cool brooder, or have been cast adrift by the mother hen there is the ever attendant danger of their crowding each other, in their coops at night. It is not at all conducive to the peace of mind of the poultry man to find from three to six nice, promising chicks smothered to death by this overcrowding. This they will not do unless they are cold. Give them warm quarters and put not too many together and this danger is obviated.

Animal food, in some form, is essential to the best growth. Its use will make the chicks stronger, plumper; will make them feather out quicker. Feed them from the time they are one week old to the day their usefulness as laying hens is past. During all this time, also, give an abundant supply of grit and charcoal.

All this is not written in the spirit of "know it all." It is simply the method that the writer has found to be the best for him. His only object in writing is to give, possibly, some useful hints to those readers of the Register who may be interested in poultry raising.

Notes on Poultry Raising.

By Miss Florence Forbes at the Napa Farmers' Institute.

The careful investigation devoted to the poultry business during the last few years has practically revolutionized it.

For success three important factors must be recognized:

First—The yarding of fowls.

Second—The use in the feed of meat meal, blood meal, etc.

Third—The use of the trap nest.

The first two go hand in hand, for fowls shut away from all food, save that given by their keeper, will lay larger and more eggs than those given their freedom.

Yarding.—In days past the expense of fencing was higher than at present. Now the low price of wire netting, and the smaller yards that can be used with plenty of litter, place the yards for layers within the reach of every one, and should be used for the sake of economy.

The South Carolina Experiment Station inclines to the belief that eggs from ranging fowls are more fertile than from yarded fowls. This is disputed by many capable poultrymen; it certainly had not been the result with with us.

Fowls in captivity need exercise. Any keeper can use his ingenuity for this. Where there is plenty of straw in which to feed the grain, little else is required for it.

Dry Mash.—A favorable condition also is attained by feeding the mash quite dry. The dry mash cannot be swallowed quickly; thus it is impossible to overload the crop. By the time in the afternoon the hens have cleaned out their boxes the cracked grain arrives and they work at that until dark.

This method is known as the Sampsom method; the directions cost one dollar. For heavy fowls it is wise to moderate the rules. The Leghorn men claim it to be almost perfect food if fed as directed. It certainly is a great time saver over the scalded mash, and it keeps the hens freer from colds. Meat meal and blood meal, as alternates, are much cheaper food than green bones. Beef scrapes are also good. Cracklings are too fat.

Winter Eggs.—Our chances for winter eggs being in proportion to our use of nitrogen, we are bound to employ it in some of its forms. Alfalfa should be plentifully supplied. In Winter alfalfa hay run through the cutter and steamed under a cover is very acceptable for the layers. Peas ground to a meal are well nigh indispensable, for it seems to give an unusually large egg. They are a first-class food for either cows or poultry; yet, in Napa, a field crop of peas is rarely seen.

There is one point to be borne in mind concerning nitrogen feeding, namely, it has to be of variable ration. The hen in heavy lay will need more nitrogen than the non-layer; and as the moulting time approaches, say in June, a heavier nitrogen ration still is advantageous. At this time, too, we begin to feed linseed meal as an acceleration of the moult, always a slow process in mild California, and woefully costly. The heaviest nitrogen feeding, of course, occurs in full moult.

Trap Nests.—The third factor mentioned is the trap nest. These little boxes are easily and inexpensively made. They are of the greatest aid to the poultrymen yet invented. By them records

are kept of the eggs laid by every hen in the yard. They need not be used always. Two weeks trapping at one time will disclose the drones amongst the hens. The poor layers should be fattened and marketed without delay. After a month or so set the traps again and recull. By doing this at intervals all summer, there remains to the poultryman at moulting time a flock composed of his very best and most persistent layers, all to be saved for breeders the following year. And as he follows this course from year to year, very remarkable results can be obtained. Wyckoff claims one hundred and ninety-six eggs per head in a flock of six hundred White Leghorns; Pulsifer advertises two hundred and seventeen eggs of White Wyandottes.

Results of this class are not attained in California very often, although our chances for a large egg yield are far better than those of Eastern poultrymen. It seems strange, for eggs and poultry are cash always; and with poultry, if of a good quality, one can obtain double the market rates over those published in the daily papers.

Possibly our indifference is caused by non-reading of good poultry journals. A farmer does not ask his man to plow without a plowshare, nor hoe without a handle to his hoe. Yet he keeps his poultry without the tools to work for them, and one of the most important things is a good poultry journal. In most of them can monthly be found the records of men who have achieved success, and the why and the wherefore; also the failures and their causes. One paper is wholly published by a poultry farmer who works amongst his fowls himself, who has started from the very beginning in the simplest way. In fact, he is no different from any of us save in his attention to his business.

The average Californian does not read these records and thereby loses time and money.

THE SUGAR BEET.

Sugar Beet Growing at Chino.

By John Ruopp at Chino Valley Farmers' Club.

The culture of the sugar beet in this country is yet in its infancy, but we can now see, at this early stage, the great advantage to the country and the profit to be derived from it, and we hope before many years have elapsed to see it one of the leading industries of the country.

But the disadvantages are also to be considered and ways and means discussed to improve our methods of cultivating so we can retain the moisture in our soil, for here in California our greatest disadvantage is insufficient moisture.

Rotation.—In the first place there must be a system maintained, as with any other business, and to do this we must first start with a rotation of crops; and in the second place the work must be done in the right time and in the right manner. Plowing is generally commenced when planting should be done. By this delay much valuable moisture is lost, and this point cannot be too strongly impressed upon our farmers. In many cases the farmer undertakes too much, and so gets behind with his work, the natural vegetation soon absorbing the moisture; and this proves a detriment instead of a benefit as it should be, for if plowed under at the proper time it is a good fertilizer and will quickly decay and add to the moisture. Again in some cases, even if the other tools are not used at once, the moisture is lost, and to retain this is of vital importance to us Chino farmers, and in order to make a success these details must be carefully attended to in beet farming.

After doing this I would suggest that we take one-third of our land for barley, one-third for beets, and the other one-third for any other crop which we may prefer. After the crop is off the first one-third the stubble should be plowed under at once, and then, during the dryest time of the season, cleaned of all growing roots and prepared for deep plowing, which should be done in the fall, and the land left in good condition to get the full benefit of the winter's rain.

Plowing.—A different system of plowing should also be adopted. Plowing around—starting at the edge of the field and plowing in circles toward the center—should be avoided, as it is not a good plan for the land to be left in such manner, the soil being forced toward the outside and left lower where you turn around toward the center, and this might cause a wash. If you must plow around better start in the center, thus removing the soil from the outside; but the proper way to plow is back and forth, and by this manner of plowing the land will also retain more moisture.

We all know that our beet land is more or less in need of fertilizing. We should haul our stable manure on it before the deep plowing in the fall. It would be a good plan to distribute the stable manure over half the stubble land, and on the other half plant green fertilizer. In this way you would get on all of your land stable manure and green fertilizer once every six years.

Planting.—The remunerative results from any crop depend largely upon the manner of cultivation. It is particularly so with sugar beets. Beets should be treated as a garden plant, and the seed bed in which they are planted should be as well attended to as a garden plot. The depth of the plowing is very important, and ought in no case to be less than 10 inches, but 14 is better in order that the root may penetrate to the greatest depth, for on the length of the root depends tonnage. The preparation for the seed bed depends greatly on the nature of the soil, but it must be by all means firm and compact, for in this state it will retain the moisture better and the seed will germinate quicker, but especially will this prove of great benefit if the land is plowed but a short time before seeding. In fact, then, your ground should be worked down every day as fast as you can plow it.

The planting should be done as early as possible. At Chino, I think, the proper time is from February 15 to April 15—in fact, in every case as soon as the land is dry enough to be worked.

In a majority of cases late planting is responsible for a light crop and sometimes for a total failure. We farmers in Chino should fully realize this fact, as it is forced upon our attention every year, and the worst of it is, we do not all profit by past mistakes, but still continue to follow late planting.

Cultivating.—The next step is cultivating and thinning, which is also of great importance, as every step in beet culture is, but unfortunately we do not attach much importance to it. A beet field must be free from weeds at all times, and the best and cheapest way to keep it clean is to "take time by the forelock" and cultivate it before the weeds start. Here is where most failures occur, and if weeds are allowed to get a start it will involve much unnecessary and expensive handwork. Thinning should be done as soon as the third or fourth leaf appears. If left too long, the roots will entwine around each other and make it detrimental to the plant that is left, and often the largest and most thrifty beet is pulled out and the small, weak beet left. The distance should be guaged according to the strength of the soil—the richer the soil the closer the beet—but in very few cases should the distance be less than a foot, and even such a stand will give 300,000 beets to the acre, and if they weigh only one pound each will give fifteen tons to the acre, with a minimum price of $4.25 per ton, or $63.75 per acre. So let us strive to do our work well, for in no other way can we expect the best results.

Of course, we realize that the unfavorable climatic condition of the past three years has been a great drawback to the beet industry in Chino, but we hope the time is not far distant when we will have a well-developed irrigating system for our semi-moist lands and a system of drainage by ditches for our low lands. In no other way can we establish the beet industry in this locality on a sure basis.

Discussion.—As reported by the Champion the following points were brought out in discussion: When wire worms are numerous in a field W. H. Delphy would delay thinning for a short time in order to be sure of a stand. Mr. Ruopp knew of no way to get rid of wire worms entirely, but very frequent rolling and cultivating will drive them down where they will do less harm. W. J. Schaefer had read that heavy liming of the soil will kill wire worms. V. Gustafson thinks lime will undoubtedly kill the wire worms, as he has compared the stand where lime was used and where it was not, the stand being good on the former, and wire worms having done much damage on the latter. Mr. Ruopp said lime will at least give the beets a more vigorous growth and thus enable them to better withstand the ravages of the worms. Lime will start a heavy growth of vegetation on the land in the winter, and so enrich it in humus, which is so necessary to plant growth. He would not put less than twenty-five tons per acre on land, and where alkali is strong he would put forty to fifty tons per acre. G. A. Hillman had found that lime will enable the soil to retain moisture better, also that the plow will scour better in land that has been limed.

It is advisable to let strong alkali land lay long enough after plowing to grow weeds before planting to beets? Mr. Ruopp said beets should be planted on alkali land just as soon as possible after plowing.

How close, how deep and how often should beets be cultivated? Mr. Ruopp said beets should never be cultivated less than four times, and in a great many cases oftener. Cultivate just as close to the beets as possible at first, leaving more space as the beets grow larger, in order not to disturb the fibrous roots through which the beets feed. If these are broken off the growth of the beet is set back. He would not cultivate deeply. The moist soil should not be turned up by the cultivator, but the coating of dry soil on top should be frequently stirred to keep the moisture down. Mr. Shaefer had found that where the soil is hard the beets would not grow long and tapering as they should unless they were cultivated deeply.

What effect will tile draining have on Chino ranch moist lands? On this question opinion was divided. Mr. Ruopp thought that open ditches would drain the land sufficiently without drawing off the moisture that should be retained in the soil through the summer. He does not believe that alkali will be permanently cleared from the soil by tile drainage. Mr. Mills said the experiments with tile drainage by the Experiment Station southwest of town were not conclusive, as sufficient rainfall had not yet been had since the tile was laid to carry off the alkali.

It may be considered as demonstrated that the earth would be fluid at a certain depth but for the pressure of the superincumbent mass which prevents it expanding to the volume which fluid requires and presses it into a solid. The relief of pressure allows that to expand and become liquid, and it is already above the temperature of fusion, but is unable to fuse because of pressure. When that pressure is removed it expands into fusion. The interior of the earth is mostly a solid. Up to within 30 or 40 miles of the earth is solid. The center of the earth is solid with small reservoirs, a certain amount of liquid matter in local pools, of vast extent in some cases, deriving the heat from the initial heat of the earth, the residual heat from the original heated condition of the earth. This may constitute the explanation of a volcano.

The barometric reading in inches multiplied by .4908 = pressure per square inch. from which is determined the approximate altitude. For instance, if the barometer indicates 25.4, the pressure per square inch is 12.47, showing, approximately, an altitude of 4620 feet. The barometer standing 21 inches indicates: pressure, 10.31; altitude, 9900 feet.

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Agricultural Review.

ALAMEDA.

FRUIT CROP PROSPECTS.—Niles Herald, April 12: Almonds were the first to bloom and when in full flower the heavy rains of last February washed them badly, followed by severe north hot winds. As a result there are very few almonds in this vicinity. In most of the orchards there will not be enough to pay for picking. Apricots are bunched as usual, but give promise of a good crop. Thinning has begun in most of the orchards. Some sales are reported at $25 per ton, ten to the pound. This is considered good as prices run at this early date, but if all reports of damage throughout the State prove true better values will prevail later in the season. It is yet too early to know how cherries will come out, but the general belief is that they will be a fair crop. The same can be said regarding pears, although some sales have been made of Bartletts at $20 per ton. Prunes, while not so heavy as last year, give promiso of a good crop. The fruit, being thinner on the limbs, gives assurances of larger sizes and better quality, as the trees will have a better show than when there is so much fruit, as was the case last season.

CATTLE THIEVES AGAIN AT WORK.—Livermore Herald, April 13: Thefts of cattle have occurred so often during the past two years in the Livermore valley and the adjacent hill ranges as to lead to the suspicion that an organized band is doing the work. The latest theft is the largest and boldest. On the evening of either the 2nd or 3rd of this month thieves entered the range of P. Fabian & Co., which is located between Midway and Corral Hollow, and drove twenty-two head of beef cattle through the Mulqueeny ranges—cutting the wire fence with nippers—and on to the Johnson place. Here they either became alarmed or decided that they could not handle so large a drove, so they left all but ten head, which included a couple of head belonging to the Mulqueeny estate, which they had picked up on their way through the range, and made their escape through the Sweet place. The Fabian cattle were all branded "JC" and their ears were underscored. Fabian & Co. offer $100 reward for the arrest and conviction of the thieves.

BUTTE.

BUTTE COUNTY HEMP.—Biggs Argus: Wm. J. Cunningham, who is employed at the hemp mill of John Heaney, a few miles below town, was for some time engaged in the bag factory at San Quentin prison, having gone there from Oregon about a year ago to experiment with native fibers, pronounces Butte hemp superior to any fiber produced anywhere for grain bags. While in town Sunday he called attention to a vest and undersuit upon his person, the cloth of which had been manufactured by himself from hemp fiber grown by Mr. Heaney, and stated that with proper machinery and Butte county hemp he could make as fine grades of cloth as could be produced anywhere in the world. Mr. Cunningham says he can manufacture from Butte county hemp at a cost of only 7 cents per pound a better quality of twine than has hitherto been imported at a cost of from 30 to 40 cents per pound.

POULTRY PAYS.—Oroville Register: Mr. and Mrs. L. Schwerin have forty laying hens and in January they obtained 45 dozen and 2 eggs, in February 50 dozen and in March 55 dozen and 2 eggs. In January they averaged 17 eggs a day, in February 21 and in March 21 eggs a day. From the 1st of April up to the night of the 4th they obtained 75 eggs. Mr. Schwerin tells us he feeds wheat mostly, but also all the green food he can get, and oyster shells and burnt bones are freely used. He has kept an exact account for a number of years and finds poultry profitable.

COLUSA.

KEEP AWAY FROM MULES' HOOFS.—Colusa Sun: John Peterson, one of the workmen at the ranch of John Cheney, Jr., was kicked Sunday morning by a mule and painfully, but not seriously, injured. Peterson was trimming one of the mule's feet, when, without warning, the animal kicked, striking him just over the right eye, cutting a gash to the bone. Had the mule's hoof landed an inch lower he would have lost an eye, and an inch or more higher, he might have lost his life.

CONTRA COSTA.

GREEN FRUIT DANGEROUS.—Antioch Ledger: The nino-year-old son of John E. Davis, in company with two other boys, picked a quantity of green apricots about ten days ago and ate heartily of them. Two of the boys were spared the trouble of pain or sickness, but Mr. Davis' little boy immediately became a victim to excruciating pains. He was placed in ice for two days this week, but his condition developed so alarmingly that it was deemed advisable to send him to the Children's Hospital in San Francisco.

HUMBOLDT.

ANOTHER TIMBER DEAL. — Eureka Standard: One of the largest redwood deals ever transacted in this State has been made by Isaac Minor, Sr., of this county, he being the purchaser of some 20,000 acres of virgin redwood of the best quality. The sellers of this valuable tract were Kraft Bros., bankers, of Red Bluff; James Camp, capitalist, of San Francisco; George W. Chandler, president of the Del Norte Lumber Co., and R. D. Hume of San Francisco. The purchase also included one of the finest landings on the North Pacific coast, which is situated at the mouth of the Checto river, in southern Oregon. The harbor is well sheltered from the north winds and has five fathoms of water within 200 feet of shore, enabling vessels of large capacity to enter with safety and load for any port in the world. Eastern capitalists are rapidly securing all available redwood forests in this State. When the Eastern forests are exhausted, their Eastern customers will be supplied direct from the Pacific coast. This deal involves nearly $1,000,000.

LOS ANGELES.

LARGE RANCH SOLD AT SAN DIMAS.—Pomona Times, April 10: A sale has been made to George E. Coleman, a wealthy lemon grower of Santa Barbara, of the L T. Gillett ranch at San Dimas. This ranch consists of 103 acres, planted largely to lomons and oranges, together with a large interest in the private well and pumping plant owned by L. T. Gillett at La Verne.

NAPA.

SAVED A CROP OF GRAPES.—Napa Journal: Charles H. Mather of Foss Valley says there has been no frost in his neighborhood this year; but on the lower levels, and particularly on the Miller and Estee places, the vines have been injured. He was reminded thereby of his own experience with frosted vines four years ago. The frost had "burned" his vines pretty badly, and ho thought that the crop would be a failure. He told his fears to an old French vineyardist, who advised him to go over the vineyard and pick off every frosted bud. The Frenchman told him that new buds would come out in place of those pulled off. He acted upon the advice, with the result that from his twelve acros of vines he picked forty-seven tons of wine grapes and three tons of table grapes, and they were the finest grapes he ever raised on the place.

RIVERSIDE.

HISTORY OF NAVEL ORANGES.—San Bernardino Press: The two "original" Washington Navel orange trees in southern California stand on what is known as the Tibbetts place at Riverside, now owned by the estate of the late Lewis Jacobs, and they have been offered by the administrator, Oscar Newburg, to the cities of Redlands and Riverside, as historic trees, and as such should be cared for by these two famous orange growing cities. The one offered to Riverside has been accepted, but according to the Redlands Facts the board of trustees there has "declined the offer with thanks." The trees are, of course, large and can be moved only with considerable difficulty, and it may have been on this account that Redlands declined to move the tree to one of the parks in that place. Riverside has accepted, but the problem of moving the tree and its location have not yet been reported on by the officers to whom it was referred.

SACRAMENTO.

LOCAL FRUIT PROSPECT GOOD.—Sacramento Bee, April 12: Whatever may be the extent of damage from frost in other parts of the State, the fruit orchards of this county have escaped any serious injury. Mr. Dawson of the California Canneries Co. of San Francisco returned to Sacramento to-day from a trip down the river. He says there has been practically no damage to the fruit crop of that great district from frost, and that the crop prospects are excellent. Superintendent Baumo of the same cannery says the damago from frost in the orchards along the American river is very slight, and that good crops are expected from that district, though grapes may be more or less affected.

SANTA BARBARA.

AYRSHIRE CATTLE.—Santa Barbara Press: Dr. Stanford Stevens of New Albany, Vermont, is paying a visit to the Ayrshire cattle of this section, a part of which the doctor raised on his Vormont farm. Among the carload of Ayrshires shipped here for experimental purposes about a year ago the four young bulls now owned by James Morgan, F. L. Kellogg, John Rutherford and A. W. Canfield were born and raised in Dr. Stevens' corral. He was of tho opinion that the breed will flourish better here than in the far East, where it has long been a profitable stock. Dr. Stevens remarked that even the cattle from his corral were now enjoying a far better existence in the mild climate than he could afford at home.

SANTA CRUZ.

COWS IN QUICKSAND. — Watsonville Register: Three cows belonging to Hazen Hoyt of Vega had a trying experience recently. About 7 o'clock in the morning, while the animals were being driven across the Pajaro river to an alfalfa field, they struck the quicksands, and, after considerable floundering, sank until nothing but their heads and backs were visible. One of the cows was extricated from its precarious position without much difficulty and came out of the struggle with the loss of a horn. The other two animals resisted all efforts to save them until a block-and-tackle was brought into play, when they, too, were rescued. Tho cows were in the quicksand from 7 o'clock in the morning until 3 o'clock in the afternoon.

CATCHING GOPHERS BY WHOLESALE.—Watsonville Register: Frank Dexter broke the record for catching gophers recently. His field of operations was the K. F. Redman ranch, east of town, and in 24½ hours he succeeded in trapping 233 pocket gophers. The largest number caught was sixty-three gophers in eight hours, and the tails were counted in the presence of reliable witnesses. Dexter used fifty-two traps in his operations.

AN APRICOT ORCHARD ALL RIGHT.—Watsonville Pajaronian, April 11: The apricot crop of the Silliman orchard, in the eastern foothills of Pajaro valley, looks well and from two-thirds to three-fourths of a crop is the present promise. Many of the trees are so heavily loaded that thinning will have to be done, while others will have a very light crop. The latter were blighted by somo cause, and the damage was done before the frost period of this month. The Silliman apricot orchard is situated at a point above the heavy frost line of the valley, and where the full day's sunlight is had. The slope and soil are just right for apricots and the orchard now promises a heavier crop than last year and one of the best in central California.

THE WOOD MARKET.—Boulder Creek Echo: The wood market is pretty badly demoralized as a result of the abundance and cheapness of the new oil fuel that is being introduced everywhere, and the dealers of this place are very uncertain as to the future. No contracts are being made for steam wood and no one seems to know what the future demand will be. It is said that steam redwood must be delivered to consumers in San Jose at $1.80 per cord to compete with the new fuel. This means, of course, that it is not in the race and that steam redwood will, for the time being, be eliminated from the market.

SAN JOAQUIN.

DAMAGE BY FROST PREVENTED BY LATE PRUNING. — Lodi Sentinel, April 13: Since the late frosts so badly injured the prospects for a good grape crop, vineyardists have done considerable thinking, and a number, at least, have decided that by changing the time of pruning, the danger from frost will be reduced to a minimum. Most of the pruning now done is performed early in the year, which pushes out the young buds considerably earlier than later pruning would. Thus it is, said a well-known grape grower the the other day, that the frost does so much damage. If work in the vineyards was delayed until March, he said he was certain that far larger crops would result, simply by keeping tho buds checked until the frosty season had almost ended. The main objection to late work among the vines is that the crop does not mature in time for early market, when big prices are realized. However, growers fortunate enough to have late grapes will realize more, oftentimes, than the early shippers.

SHASTA.

LIVE STOCK ASSOCIATION A SECRET ORGANIZATION.—Millville Tidings: The Shasta County Live Stock Association is growing rapidly, ten new members being taken in recently, and is destined to prove a strong factor in preventing the stealing and unlawful killing of cattle in this and adjoining counties. The Shasta County Live Stock Association has developed into a secret organization and their meetings are now held behind closed doors, this step being necessary to successfully carry out tho objects of the association.

SOLANO.

THE FIRST CHERRIES.—Vacaville Reporter, April 13: The first box of ripe cherries of the season was shipped by Postmaster Murray Robinson to Chicago Thursday morning on the overland limited train. The fruit was in excellent condition. Not far behind Mr. Robinson's shipment was that of Lee Gates. He consigned a box of splendid cherries to Chicago, the fruit leaving on the afternoon East-bound train Thursday.

SITUATION IN THE ORCHARDS.—Vacaville Reporter, April 13: One cannot accurately determine the effects of the recent frost. It was not as effective as is generally believed. Pears seem to be a fair crop. It looks as if peaches would make from 60% to 70% of a crop. Apricots, on the other hand, will not exceed 25%.

ALMOND CROP NEAR DIXON.—Dixon Tribune: The almonds at Tremont are true to their natural failing and are dropping again. No one knows at this time how much of a crop there will be, but it is certain that the crop will not be a full one. It is said that in some orchards where irrigation was practiced last year the dropping is going on just the same. It is reported, however, that where the trees were irrigated last year in July, the dropping is not so bad. We cannot account for this in any way beyond the fact that trees require moisture the most during the height of the growing season, when the tree is doing its utmost to mature a crop.

SONOMA.

ALL HOPS SOLD.—Santa Rosa Press-Democrat, April 11: There has been considerable activity in the hop market of Sonoma county for weeks past. It is stated that every bale of hops in Sonoma county has been sold and the price obtained was a good one. The prospects for a large hop crop in this county are very good and the vines are looking well. A number of contracts were signed within the past three or four weeks.

SOME CHERRIES NOT HURT.—Santa Rosa Press-Democrat, April 10: Supervisor Gallant Rains has gone through his large orchard to ascertain what damage had been done by the recent frost. He found that the frost had not affected the Black Tartarian cherries at all, and that the crop will be a very large one. The Royal Ann variety has been damaged slightly by frost.

SUTTER.

"ANTHRAX" OR "BLACK LEG."—Sutter Independent, April 12: The stock men of this county are considerably excited over the appearance of that dreaded disease among cattle commonly called "Black Leg" but which is technically termed "Anthrax." The disease makes its appearance either in the breastbone or on one of the front legs. The Government authorities say when it attacks the breastbone it is fatal. The disease is propagated by flies. A number of cattle are reported to have died recently on several of the tule stock ranges in the western part of this county—some fifteen deaths occurring on one ranch a few miles west of town, and complaints have been made that the carcasses, instead of being burned, have only been partially buried, thereby giving the flies a chance to spread the disease over the entire country. Too much care cannot be exercised to suppress the spread of the spread of this fatal disease among the cattle.

TEHAMA.

ONE ORCHARD AT LEAST UNINJURED.—Red Bluff News, April 14: Charley Cofer was down from the Summit ranch Saturday and he says that his orchard escaped the frost entirely, and that none of his fruit crop was injured. His peach trees are loaded with fruit and the trees of other kinds of fruit are well filled. He believes that his orchard escaped by being elevated above the frost wave. The elevation of the ranch is about 800 feet above sea level.

TULARE.

WILD CATS, FOXES AND COYOTES NUMEROUS.—Tulare County News: The wild cats, lynxes, foxes and coyotes have never before been known to be so numerous and bold at Milo as they have been this spring. They have entered the dooryards in broad daylight and raidod the poultry.

Horse Owners! Use

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A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.*

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THE LAWRENCE-WILLIAMS CO., Cleveland O

THE HOME CIRCLE.

That Boy o' Rogers.

That boy o' Rogers—Lord spare me
Fr'm raisin' sech a brat as he!
Ef ever mischief was boiled down
Into a freckled, rod-haired clown,
An' turned loose on two spindlin' shanks
T' bother mankind with his pranks,
'Twas that ar boy o' Rogers!

Ef ye sh'd find th' long grass tied
Across th' path, or ye sh'd slide
Down th' front steps, 'twas that ar lout
Had spread th' sof' soap all about!
Ef any mischief 't all was done,
Ye c'd jes' pin it down t' one,
'Twas that ar boy o' Rogers!

Th' wa'n't no question that ho'd be
Inside th' penitentiary
Afore he was a man full grown.
He could conspire more tricks alone
Than any boy I ever seed;
Th' biggest scamp, we all agreed,
Was that ar boy o' Rogers!

Ho turned up missin'—went out West—
I 'low we thought 'twas th' best
Thing that had happened yit,
When he made up his mind t' git.
For us he couldn't go too fur,
An' we all said "Good riddance, sir,"
T' that ar boy o' Rogers!

'Twas nigh on twenty years ago;
I was out West a month or so
Las' spring, an' Jack, my boy, says he:
"I'll take ye up to-day t' see
Th' guvernor!" Wal, sir, I'm cussed,
I knew him when I seed him fust.
'Twas that ar boy o' Rogers!

So then I says to him, says I:
"Ain't ye that boy o' Rogers! Why,
Of course ye are! I swan! T' see
A boy as full o' tricks as ye
Fer guvernor! Wal, I'll be blessed!"
"Tricks is th' things that count out West,"
Says that ar boy o' Rogers!

—Bismarck Tribune.

The Loose Rein.

Mrs. Majoribanks' husband was a forgiving man. So everybody said. The remark was often supplemented by a sniff which was not flattering to Mr. Majoribanks. But Mr. Majoribanks did not mind; rather, he allowed no one to guess that he might mind.

"For my part, I rather think he is shortsighted," exclaimed a sniffer over a cup of tea. "For no man in his senses could tolerate such peccadilloes!"

So even Mr. Majoribanks was not given credit for his large-mindedness—at least, not here. The sniff he brushed from off his feelings as he would a mosquito from his hand. The peccadilloes—well, no matter.

He would watch the larger insects come and look, and sip and drink—deep often—then go away when they were fed. He smiled upon the insects, one by one—smiled when they came, smiled when they went. Yet smiling was not his expression habitually. When he was alone his countenance changed materially. No one would have believed him to be the same man.

When he was not entertaining insects he was generally by himself. Mrs. Majoribanks was usually out. He really preferred to be alone. It was often an effort to look debonair. He had an idea, too, that his wife was beginning to see through it. That troubled him.

Above all things he wished her to be unconscious of his worries. Her own would come later on, perhaps. Why burden her now with his? She was young, beautiful, lovable. Others saw it—well, why shouldn't they? He was proud of her. If she did not realize the pain she gave him it was only because she had not learned to suffer yet. When she had learned to suffer she would understand him better—everything better—and be gentler. Not that she was anything but gentle only—he saw so little of her.

Was that her footstep? Ah! He opened the door quickly. He wanted to take her in his arms, but thought she might not like it. He straightened the cushions in a deep arm chair.

"I—thank you, George. Yes, I will sit down. Are you very busy?"

She looked round at his books and moved a small hand comprehensively.

"No—not busy."

"Well, sit down. I want to talk to you a little."

"That's good, dear! We don't often have talks now, do we?"

"Not very," she answered coldly, "perhaps, but pretty often, if you come to think of it, George. Why," brightening, "we had a talk, it must have been a week ago——"

"No; two, dear."

"Really? I remember it quite well—something about golfing, wasn't it, or shrimping, here in this very room?"

"No, in the garden, dearest—and Evelyn was with us."

"How odd! And it just happened to be Harry Evelyn I want to talk to you about to-night."

"Evelyn," said George, smiling, "must be in the atmosphere."

"Ah! You don't like him! I do!"

"Dearest, I don't in the least dislike Eveyln; but why talk of Eveyln?"

"Because I want to! I like him—I love him!"

George looked at her a moment gravely.

There she lay back among the cushions, exquisite in her white silk gown, a Rossetian head and throat. Her voice fell soft in cadence; her lips were parted and her breath came eagerly between. A little flush had mounted to her face and gone away again, leav- a spot of pink upon each cheek close to the eyes, giving them extra brilliance.

"Are you sure?"

George spoke very quietly.

She turned her head and looked at him, with surprise.

"Of course!"

"I'm sorry."

"Aren't you angry?"

"No."

"Why aren't you angry? Husbands should be under such circumstances."

"Should they? Then I am not a pattern husband," he sighed. "That is the trouble, possibly."

"What trouble?"

"Well—why are you in love with Evelyn?"

A man is usually more at ease with problems standing. At this point Majoribanks rose and walked to the fireplace. There was no fire, but he turned his back to an imaginary one.

"Well?"

George had not been looking at her. Her voice recalled him.

"Oh!" We were speaking of your affairs, I think?"

"Really, George, you are most absent-minded! And such affairs, too! So important!"

"Of course! Well, what do you mean to do?"

"What can I do under the circumstances?" she asked, plaintively.

"Nothing, I suppose."

"Nothing!"

Mrs. Majoribanks' voice expressed consternation.

"Didn't I say I loved him?"

"True. Well, what do you think you'll do?"

"We've arranged to go to Brussels to-morrow. I thought I'd tell you first—you've always been so good!"

George was silent. By that light it would have been difficult to tell he had turned paler.

"You have nothing to say, George? Not even 'Thank you?' We might have gone without telling you anything about it, you know! Most women would not have been so frank."

"No—I daresay you're right."

"To go?"

"No! About most women."

"Oh! * * * Why don't you say something? You're not angry, or even surprised! I don't believe you care a snap of the finger whether I go or stay! I've spent sleepless nights wondering how you'd bear it! I might have saved myself the pains!"

Mrs. Majoribanks dried her eyes with some energy.

"Yes, you might."

"What do you mean?"

"What I say. Its makes little matter whether you tell me or whether you don't. If you go, you go. If its my advice you want, it's quite another matter——"

"What would your advice be?"

"Not to go."

"You're unkind! What's the object in keeping a woman against her will—her better judgment. A woman—who doesn't love you?"

"There is no object. I was not thinking of myself at the moment."

"What? Of me?"

"Yes."

"I can be happy only with Harry Evelyn. Wouldn't you have me happy?"

"Yes."

"You sound as if you meant it—yet you would advise me to give up happiness! I suppose you're thinking of the scandal? Do you suppose I care for anything anyone can have to say of me? The people who'll talk can't make me happy. Harry Evelyn can."

"Are you sure?"

"Of course, I'm sure. Harry Evelyn and I think the same of every subject. He is an artist; so am I, temperamentally. He loves me with all his soul—as I love him. We can never be happy apart."

"George was silent."

"I'm sorry if I seem to spoil your life, George, but, you see, there's no use our both being wretched and I don't really think, when I am here, I fill your life completely. Pity you ever married me, dear. 'Twas a bit of a mistake, I think."

She rose and came to him and put her soft, cool arm about his neck, like she used to do at first.

George looked away. His face quivered. He clenched his teeth. He must be a man.

"People — sometimes — make mistakes," he answered in a strained way. He could not think clearly while she was so near him. He took her arm gently from off his shoulder. "We will not talk of that now," he said. "These things, no doubt, are palpable. We will speak of your affairs. Which boat do you mean to leave by—morning or afternoon?"

"Morning. You might be a little kinder, George, seeing it's the last time we shall every talk together!"

Her voice trembled.

"What would you like me to do?" he asked sharply.

"Well, not take things quite so matter-of-course. I wish you'd be a little angry."

"Why angry? Anger is a stupid thing, and wastes much time."

"In your place Harry Evelyn would have lifted the roof!"

"If you're leaving by the early boat I would advise you going to bed at once. Has your maid seen to the packing yet?"

"N—no; I shan't take much—just a handbag with a few handkerchiefs and hairpins, and things of that sort."

"And the maid?"

"Oh, no! Harry's poor. I shall have to do without Harper."

"Do you think you will like—roughing it?"

"I shall love it! We mean to live a sort of gypsy life, you know—genuine bohemians. I shall take up painting. Harry says I have great talent, and it's a shame to bury it. We can work side by side. He thinks I'll be a second Marie Bashkirtseff, only more profound. Harry has very clear insight."

"Seemingly."

"You needn't hate Harry so?"

"My dear child, I think Harry is a young lunatic, that's all."

"You always hated enthusiasts, I know! Crushed every scrap of talent I ever had by jeering at it."

Mrs. Majoribanks was in tears.

"My dear, I think you're quite mistaken. I appreciate your talent to the full. Later on, when you can give yourself a little time to think, you will remember, I hope, that you were somewhat unjust in this."

"Later on! You mean when we have passed out of each other's lives forever?"

"Quite so. When you are famous, and I am—"

"What? The father of a lot of little Majoribankses? That reminds me—"

"Yes, I wondered whether you would remember—"

"Oh, I must say 'good-by' to her! Do you think nurse would let me come up now?"

"I can't say."

"She would, of course, if she knew the circumstances, but I can't very well explain—"

"Shall I?"

"You might go up first, George, dear, if you wouldn't mind very much, and—and prepare her. Say I'm called away suddenly, or something. I'm so dreadfully afraid of her! You know how she treats me! Would you mind?"

"I think we might go up together.

A PALE-FACE GIRL

may be almost safely set down as wanting red in her blood. If subject to dizziness, fainting, shortness of breath on slight exertion, no doubt remains.

To want red in the blood is to fail of the good of one's food. Her food is not nourishing her. She needs a change.

The easiest change she can get, and one of the best, is Scott's emulsion of cod-liver oil.

It gives her the upper hand in the contest—her food has the upper hand now—she is pale no more.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

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She will hardly be able to refuse such a deputation."

"Very well! Keep close to me!"

At the second flight she had slipped her hand nervously under his sleeve.

George rapped very gently at the nursery door. There was a wet sheet over it.

"How stupid of nurse. If she wants a portiere, why doesn't she ask for one?"

Nurse opened, half undressed, an expression of annoyance pervading her face.

"We want to see the baby, please, nurse," said Mrs. Majoribanks, amiably.

"I'm afraid, m'm, I can't allow it!" Nurse spoke with authority.

"You must allow it," said Mrs. Majoribanks, reddening, "or I'll dismiss you this very instant!"

Nurse took it blandly, but looked questioningly at Mr. Majoribanks, who nodded gravely.

"Very well, m'm; you take the responsibilities along with it, then. I'm disobeyin' doctor's order—"

"Doctor's orders!" whispered Mrs. Majoribanks. What do you mean?"

She rushed to the child's cot.

"For God's sake, m'm, don't waken her!"

"How red her face is! What's the matter?" She turned appealingly to nurse.

"She's had scarlet fever, m'm. The crisis is passed, but the doctor says she must be kept quiet and sleeping for fear of a relapse."

"Scarlet fever!" she repeated low, coming closer to George; "and you never told me! Did you know?"

"Yes. You'd better come away!"

"No—no, not yet!"

"But it is not safe for you to stay!"

"I don't mind. I'd rather stay. I'm her mother!"

Nurse smiled grimly.

"There's fear of you taking it, m'm."

"I don't care! I'll stay!"

"Remember—the first boat to-morrow," whispered George.

"There's plenty of time for that. I can put it off a day or so—a week, even."

"Come away, dear! You can do no good here, really. You'll only fag yourself unnecessarily. Nurse has all instructions and knows just what to do."

"I'm sorry, nurse," said Mrs. Majoribanks; "I don't dismiss you."

"Thank you, m'm."

"Come away, dear!" said George. "Do as I say!"

"Yes. Good-night, nurse."

"Good-night, m'm."

Mrs. Majoribanks gave a rapid look at the sleeping child and left the nursery with George. When they reached the first landing she stopped a moment and looked up into his eyes.

The light on the landing was dim, but George saw tears upon her face.

He put his hand on her head gently.

"You mustn't fret, dear," he said. "The child is in good hands."

"But she's my child—and yours—and she's with strangers!"

"Nurse is very fond of her," said George.

"But she's my child! How is it I wasn't told she was ill?"

"Well, dear, there was no use distressing you unnecessarily."

"And you knew it all the time?"

"Yes."

"And I'd have gone away, I believe, and only thought of her after! What sort of a mother am I?"

George smoothed her hair, but said nothing.

"Why are you so good to me, George?"

He said nothing, only smoothing her hair very gently.

"Why are you, George?"

"Well, perhaps because I think you sweet and good."

"How can you, George? You are the only man I know who thinks me—good! How can you?"

George was silent.

"Tell me—why are you so kind and gentle with me?"

"I love you." George spoke simply.

"Do you?" she asked, stepping back, a thrill in her voice. "I thought you had outlived that long ago!"

"Not so," said George, pressing his wife to his breast, "I have always loved you."

"And to think that I should so far forget myself as to think of that horrid artist while I have such a dear husband," sobbed Mrs. Majoribanks.—The Sketch.

The Turn of the Tide.

You may fondle your fame, like a hunter his game,
And exult in the roar and the rattle,
While the multitudes shout and the cannon blaze out
The praise of the victor in battle;
But the victor will pine when the shoutings subside,
And another will shine at the turn of the tide.

You may garner your gain, like a farmer his grain,
And boast of your bonds and your money,
You may gather your wealth by struggle or stealth,
As gathers the bee its honey;
But your honey will pall in the heat of your pride,
And turn into gall at the turn of the tide.

You may subjugate men, as swine to the pen
By the rod of the tyrant are driven;
You may flourish the whip with a merciless grip,
While force to your fingers is given;
But your fingers will fail, and the men you deride
Will flourish the flail at the turn of the tide.

You may prosper by wrong, as tyrants do, long,
And rule like a pitiless Nero,
And the truculent slave may lustily rave
In praise of his maculate hero;
But the tyrant will quail when the Judge shall decide,
And the right will prevail at the turn of the tide.

—Geo. Whitman, D. D.

The Right Kind of a Boy.

The other morning we were in the midst of a three day's rain. The fire smoked, the dining-room was chilly, and when we assembled for breakfast, papa looked rather grim and mamma tired; for the baby had been restless all night. Polly was plainly inclined to fretfulness, and Bridget was undeniably cross, when Jack came in with the breakfast roll's from the baker's. He had taken off his rubber coat and boots in the entry, and he came in rosy and smiling.

"Here's the paper, sir," said he to his father, with such a cheerful tone that his father's brow relaxed; and he said, "Ah, Jack, thank you," quite pleasantly.

His mother looked up at him, smiling, and he just touched her cheek gently as he passed.

"Top of the morning to you, Pollywog," he said to his little sister, and delivered the rolls to Bridget, with a "Here you are, Bridget. Aren't you sorry you didn't go yourself this beautiful day?"

He gave the fire a poke and opened a damper. The smoke ceased, and presently the coals began to glow; and five minutes after Jack came in we gathered around the table, and were eating our oatmeal as cheerily as possible. This seems very simple in the telling, and Jack never knew he had done anything at all; but he had, in fact, changed the whole moral atmosphere of the room, and had started a gloomy day pleasantly for five people.

"He is always so," said his mother, when I had spoken to her about it afterward, "just so sunny and kind and ready all the time. I suppose there are more brilliant boys in the world than mine, but none with a kinder heart or sweeter temper, I am sure of that."—Our Dumb Animals.

The boy is taking an interest in music," remarked the young man's mother. "He has joined the musical society in his college."

"What does he do?

"I can't quite make out, exactly. By some reports I should judge that he is singing second tenor, and by others that he is playing third base."—Washington Star.

DOMESTIC ECONOMY.

Domestic Hints.

Consomme Chasseur.—Put into a stewpan two ounces of butter, two sliced onions, a carrot, two stalks of celery, two or three bits of turnip, with thyme, parsley and a bay leaf. On this lay any bones of game with giblets, cover tightly and let simmer for half an hour. Let the contents get brown, but not black. Then pour in about two quarts or so of good stock, preferably chicken or poultry. Let it come to the boil and then let simmer for four hours. Strain off into an earthen basin and let it get perfectly cold. Skim off all the fat, strain, and heat ready for serving.

Yorkshire Tea Cakes.—To make them sift a scant quarter of a teaspoonful of salt with four cupfuls of flour and rub into it one-half cupful of solid butter. Dissolve a quarter of a yeast cake in a little tepid water, and add to it the flour with enough milk to make as soft a dough as can be handled. Roll into a very thin sheet, and cut it into cakes the size of a tea saucer. Place them in a warm part of the kitchen, and let them rise until they are three times as thick as they were originally. Bake in a quick oven. As soon as they are done split each one, butter it, cut it into quarters with a hot knife and serve at once.

Prunes in Rice Border.—Sprinkle one cup of rice slowly into two quarts of salted, boiling water and cook rapidly until the grains will mash easily between the thumb and finger. The time of cooking will depend upon the age of the rice, as when old it takes longer; twenty minutes to one-half hour should be allowed. Drain and press into a buttered border mould. Wash one and one-half pounds of the best prunes, then soak in water to cover for two or three hours. Cook gently in the same water until the skin may be pierced easily, but not until the prunes fall to pieces. When about half done, add one and one-half cups of sugar. If the prunes are put directly into rapidly boiling water the skin will remain tough even after the pulp is overcooked. Turn the mould on to a large plate while the rice is warm, or it may be prepared beforehand and then set in a pan of boiling water to heat through. Fill the center with prunes and arrange a row at the base. Serve with cream or with a sauce made from the syrup drained from the prunes and flavored with lemon. This is a comparatively inexpensive dessert and a healthful change from rich pastries or puddings.

To fricasee rabbits brown, take two young rabbits, cut them into small pieces, slit the heads in two, season them with white pepper and salt, dredge them with flour and fry them a nice brown in fresh butter. Pour out the fat from the stewpan and put in a pint of gravy, a bunch of sweet herbs, half a pint of mushrooms, a few truffles, if you have them, and three shallots or green-top onions chopped very fine. Cover them close and let them stew for fifteen or twenty minutes. Then skim the gravy clean, add a spoonful of catsup and the juice of half a lemon; take out the herbs and stir in a piece of butter rolled in flour. Boil it up till thick and smooth. Skim off the fat and serve.

In making butters of various kinds for sandwiches, first rub the butter to a cream, then blend with it the flavor wanted. Caviar, anchovy, sardine, cheese, lobster, parsley, chives, cress, chutney, chili and horseradish are all used. A few olives, stoned and minced very fine, are an addition to anchovy sandwiches. Dates or figs chopped very fine and moistened with hot water and lemon juice may be spread on thin slices of bread and sprinkled with finely chopped nuts. These make delicious sandwiches. Finely minced ginger and candied orange peel may be sprinkled on Neufchatel cheese which has been moistened with a little butter or rich cream and spread on buttered slices of bread.

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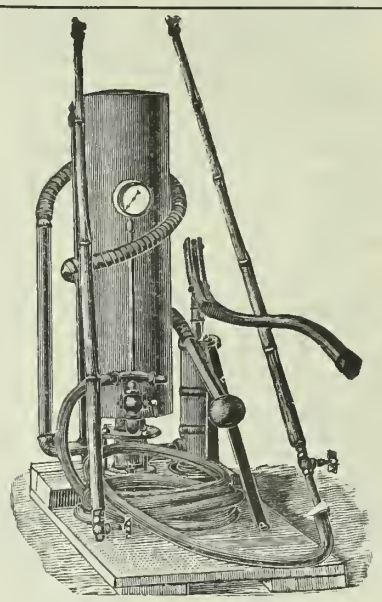

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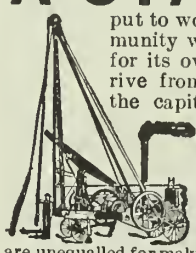

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 17, 1901.

NEW YORK WHEAT FUTURES.

Wheat futures in New York were as follows for the week named, price being per bushel:

	May	July.
Wednesday	76 @76½	75⅞@76¼
Thursday	76 @77⅜	75⅛@77
Friday	77⅜@77⅛	77⅜@76½
Saturday	76⅜@76¾	75¾@76⅛
Monday	76¾@77¼	76⅛@76⅝
Tuesday	77 @77½	76½@77

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	June.	July.
Wednesday	5s 9⅝d	5s 9⅞d
Thursday	5s 9⅜d	5s 9¾d
Friday	5s 9¾d	5s 10½d
Saturday	5s 9 d	5s 9¼d
Monday	5s 9 d	5s 9⅛d
Tuesday	5s 9¼d	5s 9⅛d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	——@——	1 05⅜@——
Friday	99⅞@1 00¼	1 05⅜@1 04⅞
Saturday	99⅞@1 00⅛	1 04¾@——
Monday	99¾@1 00	1 04⅝@1 05⅛
Tuesday	1 00¾@——	1 05¼@1 05⅛
Wednesday	1 00 @1 00½	1 05½@1 05⅞

WHEAT.

There has been a dragging market for wheat most of the time since last review. It was reported that there were fears of Hessian fly doing serious damage East, and here the need of rain was felt in a large portion of the State, but wheat values failed to move upward to any appreciable extent. If local conditions alone influenced the market, values for this cereal would certainly be higher than at present. But with no pronounced strength in the wheat markets of Europe, where we have to look mainly for an outlet for our surplus, it would be phenomenal to have any very radical improvement here. Very little wheat is going outward, nor is there much pressing for sale. If any urgent demand were to set in, prices for wheat would certainly be better than they have been lately. The freight market for grain-carrying ships is weak and lower than at any previous date this season, although the supply of disengaged ships is light. The last spot charter reported was at £1 15s per ton to Queenstown, U. K., for orders, usual option as to final destination. Still lower freight rates are probable in the near future, and wheat should receive the benefit of the reductions which may take place, but as has often happened under similar circumstances, any declines which may take place in the near future in ocean freight rates may be mainly if not wholly absorbed by additional depression in wheat markets abroad. The United States visible supply east of the Rockies is given this week at 51,873,000 bushels, being a decrease since previous week of 2,017,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 99¾c@$1.01½.

December, 1901, delivery, $1.04⅝@1.06.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.01 @ 1.01½; December, 1901, $1.05½ @1.05⅞.

California Milling	$1 02½@1 06¼
Cal. No. 1 shipping, alongside	98¾@1 01¼
Oregon Valley	1 00 @1 02½
Washington Blue Stem	1 00 @1 05
Washington Club	98¾@1 01¼
Off qualities wheat	96¼@1 00

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s1d@6s1½d	6s1½d@6s2d
Freight rates	40@——s	35@36¼s
Local market	$1 96¼@1 00	$1 97½@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There are no heavy quantities of any description offering. Values are ruling steady. A very good demand is being experienced on export account, especially for South America, the steamer sailing on Saturday last taking 25,315 barrels for above destination. Business doing on local account is of only moderate volume.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY..

While the tendency of the market has been to a higher range of values, buyers have been postponing purchasing as much as possible for them to do so, hoping thereby to avoid the payment of materially stiffer rates. The immediate prospects, however, are decidedly more favorable for prices hardening than of touching lower levels during the balance of the season. Much will depend on the weather of the next few weeks. Should it continue dry, it is almost certain that buyers will find it necessary to pay more money for barley than they have been lately doing. With seasonable and beneficial showers, an easier tone will naturally prevail, but that values will recede to any great extent, even under most favorable crop conditions from this time forward, is not probable.

Feed, No. 1 to choice	80 @ 82½
Feed, fair to good	77½@ 80
Brewing, No. 1 to choice	82½@ 87½
Chevalier, No. 1 to choice	—— @——
Chevalier, No. 2	—— @——
Chevalier, poor	—— @——

OATS.

The market is very lightly stocked, especially with choice to select qualities, with no likelihood of offerings being materially increased during the next few months, as the quantity now remaining in Oregon and Washington is light, and these are our main sources of supply. The market closed strong at the advanced quotations.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 35 @1 42½
White, poor to fair	1 25 @1 32½
Gray, common to choice	1 30 @1 42½
Milling	1 42½@1 50
Surprise, good to choice	1 45 @1 52½
Black Russian	1 12½@1 30
Red	1 30 @1 45

CORN.

Spot stocks are of slightly increased volume, but are still decidedly light. In quotable values there have been some radical changes developed since last review. Holders are, as a rule, contending for full current figures.

Large White, good to choice	1 17½@1 22½
Large Yellow	1 20 @1 25
Small Yellow	1 55 @——
Eastern, in bulk (carload lots)	1 15 @——

RYE.

Demand continues slow. There is more offering than immediate custom can be found for, notwithstanding the low prices ruling.

Good to choice, new	80 @ 82½

BUCKWHEAT.

Nothing of consequence doing, nor is there likely to be any change in this regard in the near future. Values remain nominally as last noted.

Good to choice	1 85 @2 00

BEANS.

The market is decidedly firm for all varieties of white beans, with stocks of the same very light in this center, and no evidence of there being supplies in the interior of noteworthy dimensions. The need of rain in the southern bean district has been aiding to impart strength, especially to the market for Limas, this variety tending decidedly against buyers. Trading in colored beans continues of light proportions, but aside from Pinks and Bayos, there are not many offering. Red Kidneys are high, stocks being small and in few hands.

Pea, fair to good, 100 lbs	—— @——
Small White, good to choice	4 75 @5 00
Lady Washington	4 00 @4 15
Butter	4 25 @4 50
Pinks	1 70 @1 90
Bayos, good to choice	2 50 @2 75
Reds	3 00 @3 25
Red Kidney	4 50 @4 75
Limas, good to choice	6 25 @6 50
Black-eye Beans	2 75 @3 00
Horse Beans	1 25 @1 75
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

No new developments in the market for Dried Peas of either variety. There are few offering and no active inquiry. Quotable rates remain as last noted.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

There is a moderate amount of purchasing being done, both here and in the interior, but proportionately more in the interior than in this center. Prices remain at a rather low range. Majority of growers are contending for higher figures than are now obtainable, otherwise there would be more activity to record. Most of the wools changing hands are of this season's clip. Old wools are in fairly liberal supply, but holders cannot see their way clear to let them go at prevailing rates.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

Little or nothing of noteworthy importance has been developed in the hop market since last review. There are virtually no hops remaining in growers' hands and stocks now held by dealers are of light volume. Some contracting of coming crop is reported, mainly at 10@11c. Values for 1900 hops are quotably unchanged, but are largely nominal at this date.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

Absence of spring rains has caused a little better tone to prevail in the hay market, but no appreciable improvement was established in quotable rates or in prices obtainable. Arrivals and offerings were of more moderate volume than for some weeks preceding, and current values were as a whole better sustained.

Wheat	8 00@13 00
Wheat and Oat	8 00@11 50
Oat	7 00@11 00
Barley	6 00@ 8 50
Volunteer	4 50@ 7 00
Alfalfa	7 00@ 9 00
Stock	5 00@ 7 00
Compressed	8 00@12 50
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

There are no heavy quantities of Bran arriving, and current figures are being well sustained, although the demand is not particularly brisk. Middlings are in limited stock and are being steadily held. Last quoted advance on Rolled Barley continued in force; with tendency upward at close. Milled Corn was without quotable change.

Bran, ₱ ton	15 50@16 50
Middlings	17 00@19 00
Shorts, Oregon	16 00@17 00
Barley, Rolled	17 50@ ——
Cornmeal	25 00@ ——
Cracked Corn	25 50@26 00

SEEDS.

Little doing at present in seeds of any sort quoted herewith, and not much stock to operate upon. Mustard is not to be had in noteworthy quantity; there is no Flax arriving, and the season for Alfalfa is ended. The small trade in progress in bird seed is at generally unchanged values.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Quotable values for Grain Bags are the same as last stated, but the market lacks that buoyant tone which was manifested a few weeks ago, owing to crop prospects being less encouraging. The demand is slow, and only at material concessions could buyers be induced at this date to take hold freely. In other bags there is little movement and no changes to note in quotable rates.

Calcutta Grain Bags, buyer June-July	6¾@ 7
Calcutta Grain Bags, spot	6⅝@ 6¾
San Francisco Grain Bags, 22x36, spot	6⅝@—
State Prison Bags in lots of 2000, ₱ 100.5 65	@—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

The market is quiet throughout and is devoid of specially interesting or noteworthy feature. While prices in force are much the same as for weeks past, dealers are not eager as a rule to purchase at full current figures, unless it be Tallow, which is in very fair request.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	8½	7
Light Steers, under 48 lbs	8	6½
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	6½
Wet Salted Kip	9	7
Wet Salted Veal	9	7
Wet Salted Calf	9½@10	8½@ 9
Dry Hides	15½@—	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	70	@ 90
Pelts, medium, ₱ skin	50	@ 65
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3	@ 3¼
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Not much coming forward of any description, and stocks in the hands of dealers are light. The immediate inquiry is not brisk, however, as there are no orders of consequence upon the market, and dealers do not care at present to purchase heavily on their own account.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@5
Extracted, Amber	4 @ 4½
White Comb, 1 lb frames	12 @13
Amber Comb	9 @11
Dark Comb	6 @ 8

BEESWAX.

Large quantities could not be placed at full current rates, but there is very little offering and market remains unfavorable to buyers.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Market is lightly stocked with desirable Beef and is firm at the quotations. Mutton is offering in sufficient quantity for immediate requirements, and while not quotably lower, the market displays no noteworthy strength. Lamb brought fairly steady figures. Veal of good to choice quality did not lack for custom at the values quoted. Hogs were in only moderate receipt, just about enough to satisfy the immediate demand for fresh pork, and brought good prices. At close, the tendency of the Hog market was to more ease.

Beef, first quality, dressed, net ₱ lb	7¾@ 8
Beef, second quality	7½@ 7¾
Beef, third quality	6½@ 7½
Mutton—ewes, 7½@—c; wethers	7½@ 8½
Hogs, hard grain fed, medium	6½@ 6⅝
Hogs, small, fat	6½@ 6⅝
Hogs, large, hard	6¼@—
Hogs, feeders	—@—
Hogs, country dressed	8 @—
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	9 @10

POULTRY.

Common old poultry and small young was in tolerably heavy receipt, as compared with the demand, and met with a rather weak market. Choice Fryers and Young Roosters were not plentiful and were in good request at full current figures. Turkeys did not receive much attention. Few Ducks or Geese arrived and such as were in fine condition sold readily at prevailing rates. Pigeons brought about as good figures as for a week or two preceding.

Turkeys, live hens, ₱ lb	12 @ 13
Turkeys, live gobblers, ₱ lb	9 @ 10
Hens, California, ₱ dozen	3 50 @4 50
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	6 50 @7 50
Fryers	5 00 @5 50
Broilers, large	3 50 @4 50
Broilers, small	2 00 @2 50
Ducks, old, ₱ dozen	5 00 @6 00
Ducks, young, ₱ dozen	6 00 @7 50
Geese, ₱ pair	1 50 @1 75
Goslings, ₱ pair	2 25 @2 50
Pigeons, old, ₱ dozen	2 00 @——
Pigeons, young	2 50 @2 75

BUTTER.

There are liberal arrivals, mainly of creamery product, and market is weak for the ordinary run of offerings, stocks showing some accumulation. Fancy marks going to special custom are bringing above quotations. Desirable qualities of dairy butter are in good request on packing account, and prevailing values for same are being well sustained.

Creamery, extras, ₱ lb	17 @—
Creamery, firsts	16 @—
Creamery, seconds	— @—
Dairy, select	16 @—
Dairy, firsts	15 @—
Dairy, seconds	— @—
Dairy, soft and weedy	— @—
Mixed store	12 @12½
Creamery in tubs	17 @—
Pickled Roll	17 @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

Supplies of flats are showing some increase and market is easier in tone, but not quotably lower. Stocks of Young Americas are small and this description is selling to good advantage, although the

demand is not so brisk as a week or two ago.

California, fancy flat, new	10	@—
California, good to choice	9½	@—
California, fair to good	9	@—
California Cheddar	—	@—
California, "Young Americas"	9½	@10½

EGGS.

The market has been without special change, values ruling steady for desirable qualities. Most of the eggs arriving continue to show good condition. Some Eastern eggs are coming forward, mainly on cold storage account for future use. Choice Eastern cost 16½c. here.

California, select, large, white and fresh.	16½	@17
California, select, irregular color & size.	15	@16
California, good to choice store	14	@15
Eastern, as to section and grading	—	@—

VEGETABLES.

There were fairly liberal arrivals of most kinds of Spring vegetables, especially of Asparagus and Peas, market for these inclining in favor of consumers. Peas are now selling mainly by the sack. Onion market was easier, on account of a fresh arrival of about 2600 crates from Australia. The crates weigh from 140 to 160 pounds, making the total invoice about 200 tons. There were few other Onions on market, arrivals from Oregon being very light. New Red Onions are expected to put in an appearance in quotable quantity at an early day.

Asparagus, ℔ box	75	@1 75
Beans, String, ℔ lb	5	@ 7
Cabbage, choice garden, ℔ 100 lbs	50	@ 65
Cauliflower, ℔ dozen	50	@ —
Cucumbers, ℔ doz	50	@ 65
Egg Plant, ℔ lb	——	@——
Garlic, ℔ lb	3	@ 5
Onions, Yellow Danver, ℔ cental	2 50	@3 25
Onions, Australian, ℔ cental	3 25	@3 75
Peas, Sweet garden, ℔ lb	2	@ 2½
Peas, good to choice, ℔ sack	1 00	@1 50
Peppers, Green Chile, ℔ lb	——	@——
Rhubarb, ℔ box	65	@ 90
Rhubarb, Mammoth, ℔ box	1 00	@1 25
Squash Summer, ℔ box	1 25	@1 50
Squash and Pumpkin, ℔ ton	——	@——
Tomatoes, ℔ box	1 50	@2 00

POTATOES.

Choice old potatoes are in limited stock and are meeting with a tolerably firm market, some very select going to special trade at higher figures than are warranted as regular quotations. The best potatoes now offering are Oregon product. There are few California on market, these being mostly Sacramento river stock and mainly under choice. New potatoes do not make much of a showing, and those arriving are being as a rule readily absorbed on local account at good figures.

Burbanks, River, ℔ cental	60	@ 75
Burbanks, Petaluma-Tomales, ℔ ctl.	65	@ 90
Burbanks, Oregon, lb cental	90	@1 15
Early Rose	90	@1 00
Garnet Chile, ℔ cental	90	@1 10
Peerless, ℔ cental	75	@ 90
New Potatoes, ℔ cental	1 00	@1 50
Sweet Potatoes, Yellow, ℔ cental	50	@ 65

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P & B Paint is used by nearly every water company because it is the only paint that offers thorough protection to tanks, wood or iron pipes, wooden conduits, water gates, etc.

The paint is applied cold with a brush; dries rapidly; has no odor or taste. One gallon will cover about 150 square feet with a sufficiently heavy coating to resist all corrosion, oxidization, rust and decay caused by moisture, heat, cold, acids, fumes or earth alkali.

The Spring Valley Water Works, of San Francisco, has been using P & B Paint for the past fifteen years in coating and painting wrought iron water pipes, gates, water tanks, joints of cast iron pipes, etc., and certify that they are very much pleased with results.

Send for booklet.

Paraffine Paint Co.
116 Battery Street, San Francisco.
5

The Fruit Market.

FRESH FRUITS.

Cherries have been forwarded in small quantities from Vacaville section to the East, and a few have been received here, but not enough to warrant quoting. The first arrivals were Purple Guigne and brought $3 per box. A fair display of this fruit is looked for on the local market the coming week. Strawberries did not arrive in very heavy quantity, and values kept at much the same range as preceding week, with market moderately firm for choice to select qualities. The Apple market is quiet, with only cold storage stock offering, asking rates for which remain without special change.

Apples, fancy, 4-tier box	1 75	@ 2 00
Apples, good to choice, ℔ 50-lb box	1 00	@ 1 75
Apples, common to fair, ℔ 50-lb box	——	@ ——
Strawberries, Longworth, ℔ chest	7 00	@10 00
Strawberries, Large, ℔ chest	4 00	@ 7 00

DRIED FRUITS.

A brisk movement is reported in Prunes at the recent cut rate to a 2-cent basis for the four sizes, good for fifteen days. Present indications are that the Association will have no trouble in disposing of remaining stocks at figures now current, and may be able to establish values on a higher basis. If prices are not marked up at the expiration of the fifteen days specified for the cut in question, there are very fair prospects for a hardening of rates before the season closes. In other dried fruits there is very little doing in this center, and values throughout remain nominally at same range as last noted, present quotations being based mainly on recent asking rates. In view of the serious damage lately experienced throughout the State to the coming crop by frost, the market as a whole should show decidedly improved condition, but buyers have so far failed to respond by materially advancing bids or purchasing to any noteworthy extent. The Apricot market is inclining against buyers on account of the frost damage, but stocks of this fruit now on market are of too insignificant volume to admit of any great trading. Should later reports confirm existing advices as to coming crop, a firmer feeling and enhanced views on the part of holders for nearly all descriptions of cured and evaporated fruits may be looked for.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½	@ 6
Apricots, Royal, choice, in sacks, ℔ lb	6	@ 6½
Apricots, Royal, fancy	7	@ 8
Apricots, Moorpark	9	@10
Apples, in 50-lb boxes, rings, pressed, fancy	4½	@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	2½	@ 3½
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5½	@ 6
Peaches, unpeeled, choice	4	@ 4½
Peaches, peeled, in boxes	11	@14
Pears, unpeeled Bartletts, halved, fancy.	5	@ 6
Pears, halved, unpeeled Bartletts	3	@ 4
Pears, quartered, unpeeled Bartletts	3	@ 4
Plums, Black, pitted	4	@ 5
Plums, White and Red	5	@ 6
Prunes, Silver	4½	@ 6

COMMON SUN-DRIED.

Apricots	3½	@ 4½
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	1½	@ 2½
Figs, White	2½	@ 3½
Peaches, unpeeled	3	@ 5
Pears, prime halves	2	@ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: Four sizes, 2c. per lb.; 40-50s, 3¾c.; 50-60s, 3¼c.; 60-70s, 2¾c.; 70-80s, 2¼c.; 80-90s, 1¾c.; 90-100s, 1¼c.

RAISINS.

Aside from the business in three-crown seeded raisins in one-pound cartons, being put forward at special cut rates for advertising purposes, there is little to report. Prospects are encouraging, however, for more activity later on. The official rates of the Grower's Association for all raisins now in stock remain as previously quoted.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb	——	@ 7
Loose Muscatel, 3-crown	——	@ 6½
Loose Muscatel, 2-crown standard	——	@ 6
Loose Muscatel, seedless	——	@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Seeded Raisins, 1-lb packages, ℔ lb. — @ 05

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

There was a good demand for choice to select Navel Oranges, with no excessive offerings of this description, and market was firm at the quotations. Poor qualities moved very slowly at low figures Lemons were in more than ample supply for the immediate demand and market presented an easy tone. Limes sold at a decline.

Oranges—Navel, ℔ box	1 25	@2 25
Seedlings, ℔ box	1 00	@——
Tangerines, ℔ box	1 00	@1 50
Grape Fruit, ℔ box	1 00	@1 50
Lemons—California, select, ℔ box	1 75	@2 00
California, good to choice	1 25	@1 50
California, common to fair	50	@1 00
Limes—Mexican, ℔ box	4 50	@5 00
California, small box	——	@——

NUTS.

Market is quiet throughout and has presented no changes since last report. Remaining stocks of Almonds are being firmly held, owing to poor crop prospects in this State, although it is reported that Europe will have a heavier yield than last year. Walnuts are not offering in sufficient quantity to justify quotations. Peanuts are commanding steady rates.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@13
California Almonds, soft shell	10	@11
California Almonds, hard shell	6	@ 7
Peanuts, California, fair to prime	4½	@ 5½
Peanuts, Eastern, hand-picked	5½	@ 6
Pine Nuts	5	@ 6

WINE.

Owing to absence of any noteworthy offerings of wine from hands of growers, the market is at present rather difficult to quote. For dry wines of last year's vintage the range of values at this date, as nearly as can be determined, is 22@25c. per gallon. These figures are more in accord with prices obtainable than they are with the views of holders. For a small lot of only fair quality 22c. was recently bid. One grower refused 25c. for choice, expecting to realize fully 30c. for the same a year hence.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	189,398	5,139,112	5,095,659
Wheat, centals	197,072	6,661,503	5,560,607
Barley, centals	33,525	3,290,825	4,607,194
Oats, centals	5,640	583,775	679,703
Corn, centals	1,400	91,899	115,815
Rye, centals	1,290	109,592	92,297
Beans, sacks	1,623	530,683	343,175
Potatoes, sacks	23,923	1,336,031	1,063,007
Onions, sacks	4,228	156,232	140,104
Hay, tons	2,449	135,755	131,686
Wool, bales	2,650	32,636	43,875
Hops, bales	142	8,180	9,595

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	69,852	2,909,342	3,453,702
Wheat, centals	114,018	6,357,104	4,897,289
Barley, centals	1,401	1,917,371	3,656,621
Oats, centals	...	48,083	39,301
Corn, centals	...	3,172	16,989
Beans, sacks	569	12,700	23,594
Hay, bales	431	85,550	111,548
Wool, pounds	...	641,031	4,324,433
Hops, pounds	350	535,990	985,097
Honey, cases	...	1,758	3,437
Potatoes, pack's	,174	128,073	67,333

California Dried Fruit at New York.

NEW YORK, April 17.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Business mostly in prunes. Values steady at quotations.

Prunes, 3¼@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions and financially able to carry out any obligations made by their firm.

WEST & TRAUX, Wholesale Druggists, Toledo, O.

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Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price 75c. per bottle. Sold by all Druggists. Testimonials free.

Hall's Family Pills are the best.

Order Them Now!

Thompson Seedless, Muscat, and Muscatel Grapes. The Zante Currant and the Sultana, Rooted Vines.

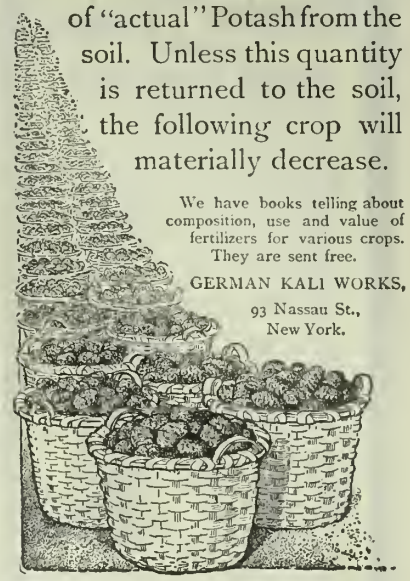
The undersigned offers to close contracts with persons desiring any of these varieties for next year at $10 per 1000, to be delivered in good order. This is an opportunity worthy of attention of all who intend to plant either or all of these varieties.

HAVE A HALF MILLION FOR SALE.

Refer to James Littlejohn, Mark Pease and Mrs. A. H. Wilbur of Yuba City, who have grown these varieties. Address

O. A. Wilbur, Box 81, YUBA CITY, CAL.

Two hundred bushels of potatoes remove eighty pounds of "actual" Potash from the soil. Unless this quantity is returned to the soil, the following crop will materially decrease.



We have books telling about composition, use and value of fertilizers for various crops. They are sent free.

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Two-Year-Old Seedlings for Orchard Planting.
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Orange Seed or Grape Fruit Seed for Seed Bed Planting.

Directions for planting seed if desired. WRITE FOR PRICES.

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LARGEST ASSORTMENT OF SEEDS ON THE COAST.

Alfalfa, Clover, Kentucky Blue Grass, Australian Rye Grass, Beet.

Flower Seeds in fine selection.

Bedding and Flowering Plants of all kinds now ready for transplanting.

Dahlias, Gladioli, Pelargoniums and Palms in choice variety.

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The old sorts and the tested new sorts; also tables for planting trees, sowing seed, etc. Remember, I send this valuable book Free! Your address on a postal card brings one.

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Full information regarding Citrus Trees furnished at any time.

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as sure an investment as government bonds. Write for new catalogue. Free.

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Marblehead, Mass.

Sharples "Tubular" FARM Cream Separators

The Wonder of the New Century. Greatest step ever made in advanced Cream Separator construction.

Superior as the Sharples Separators have always been, these **Tubular** machines are far ahead and completely distance every competitor. They are worth double the money because guaranteed under usual conditions to produce enough more butter than the best competing separator to pay fully six per cent interest on the whole first cost of the machine.

We absolutely warrant it and give free trial to prove it.

Our factory is running double turn, one gang all day and one all night, for the dairyman who sees this machine buys it.

In addition to yielding more butter it is very light running. A 600 lbs per hour Tubular turns as easily as a previous 300 lbs per hour machine. No disks to bother with and get out of order, no complications. Washed in two minutes. Top of milk vat waist high.

Highest award—Gold medal and special Knights decoration at Paris Exposition. Valuable book "Business Dairying and catalog No 131, free.

Sharples Co., Chicago Ills. P. M. Sharples, West Chester, Pa.

PAGE

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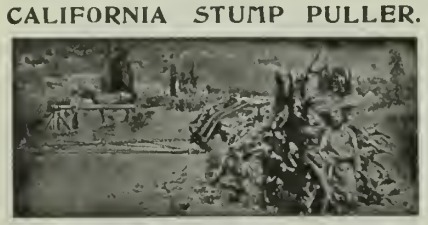

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HORSE-HIGH!

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The Fruit Branding Law.

Governor Gage has signed the law which was passed by the Legislature regarding the false branding of citrus fruits. As the law takes effect at once, the following statement of its two most important sections will be found of interest:

"Section 1. All citrus fruit contained in boxes or barrels, which shall hereafter be shipped, or offered for shipment in this State by any person, firm or corporation, shall have stamped, stenciled, or printed in a conspicuous place on the outside of every box or barrel, in clearly legible letters, a statement truly and correctly designating the county and immediate locality in which such fruit was grown. Such statement shall be placed thereon by the shipper of said fruit.

"Section 2. Any person, firm or corporation violating any of the provisions or requirements of Section 1 of this Act shall be guilty of a misdemeanor, and upon conviction shall be fined in any sum not less than $200 nor more than $500."

This law, says the Riverside Press, was introduced in the Legislature by Senator Caldwell, representative of the greatest orange growing district in the State, and he worked hard and successfully for its passage. It is an Act that will hurt no honest packer, and it will serve as a valuable check on unscrupulous dealers who seek to palm off poor fruit under the brand of the best orange growing localities. Ever since the infancy of the orange industry smutty fruit of inferior quality, grown near the coast, has been packed in boxes branded, "Riverside," "Redlands" or "Highland." The purpose is to use the reputation of these famous orange growing localities to sell fruit that could not be disposed of on its merits except at very low prices.

But this false branding has another result. It has led some consumers in the East to suppose that this poor fruit was really grown in the sections named, and was a fair sample of our product. This has oftened injured our reputation in the East.

With a fine of $200 hanging over them, packers are likely to think several times before they resort to that trick any more.

Every locality should stand on its own bottom in the matter of the quality of its fruit, and not try to palm off poor stuff under the brand of some other place, where conditions are better or the growers more enterprising.

Cabbage and Cauliflower.

C. L. Allen, a Long Islander who has lived long in the great cabbage belt which that island embodies, has written in detail of the latest Eastern methods with all the various types and varieties of cabbage, cauliflower, broccoli, Brussels sprouts, kale, collards and kohlrabi—from seed to harvest. The book is published by Orange Judd Co. of New York, and should be consulted by Western farmers who desire to keep informed of the newest things at the East.

The Fulton Pumps.

The success of these pumps for lifting from deep wells and delivery at long distances, and at elevations above the pump, constitutes one of the most important features of recent California progress in invention and manufacturing. Mr. A. T. Ames, at Galt, Sacramento county, has built up a very large business during the last few years by having thoroughly good devices and building them faithfully under his own personal supervision. He has just published a new catalogue—No. 20—which will be sent to any one interested in water lifting who sends for it at the address given. We have seen many of these pumps at work in various places and have the fullest confidence in them.

Caustic Balsam Cures Poll Evil.

BLANO, W. Va., Jan. 19, 1900.

Some time back I wrote you about a horse of mine having a swollen head and appearance of poll evil. His head is well, or about well, now by using GOMBAULT'S CAUSTIC BALSAM.

R. A. SMITH.

Elgin Watches sold by jewelers everywhere in various sizes and styles. Prices to suit. Send for free booklet. Elgin National Watch Co., Elgin, Ill.

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Black Soluble Insecticide Soap.

Awarded Grand Prize at Paris Exposition and winner of Gold Medals at International Expositions of Rome, Ville de Dijon and Turin, also Diploma of Honor at Marseilles. Recommended as efficacious by largest European nurserymen and growers, including Messrs. Vilmorin, Andrieux and others. All pests of outdoor and indoor plant life, including San Jose scale, succumb to the effects of this remedy. Fruit growers, superintendents of parks and large estates and horticulturists generally will oblige us by writing for pamphlets, prices and other information.

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WHICH IS

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FUEL OIL. ASPHALTUM. & DISTILLATE FOR SPRAYING.

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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR WEEK ENDING APRIL 2, 1901.

671,043.—GRAIN SEPARATOR—D. Best, San Leandro, Cal.
671,044.—AIR COMPRESSOR—G. S. Binckley, S. F.
671,178.—FRUIT CAR—Bollinger & Dragoo, Reedley, Cal.
671,366.—PIPE COUPLING—G. M. Brodie, Angels, Cal.
671,078.—DISTILLATION—J. T. Davis, S. F.
671,209.—AIR PUMP—R. W. Elliott, Oakley, Cal.
671,047.—HAIR BRUSH—H. H. Fox, Spokane, Wash.
671,164.—BRAKE—E. M. Fraser, S. F.
671,081.—GELATINE DYNAMITE—E. E. Green, Santa Clara, Cal.
671,068.—BED BOTTOM—Jno. Hoey, S. F.
671,051.—SPECTACLES—W. C. Jones, S. F.
671,085.—HARVESTER SICKLE—P. W. Knowles, Dufur, Or.
671,024.—MOWER—V. J. Long, Sprague, Wash.
671,112.—VEHICLE AXLE—P. B. Mathiason, Los Angeles, Cal.
671,421.—FISH DRESSING MACHINE—G. Merkle, S. F.
671,088.—PROPELLER—J. S. Morton, Oakland, Cal.
671,089.—PROPELLER—J. S. Morton, Oakland, Cal.
671,090.—PUMP—J. S. Morton, Oakland, Cal.
671,222.—TRUCK—J. J. Moule, Stockton, Cal.
671,027.—ROLLER CHAIR—A. J. Petter, S. F.
671,028.—PULP AGITATOR—J. R. Phillips, Stockton, Cal.
671,388.—PROTECTING SAFES—A. P. Prichard, Tacoma, Wash.
671,298.—GARMENT FASTENER—W. T. Schmidt, Blanco, Cal.
671,095.—RICE PREPARATION—M. Shiino, S. F.
671,073.—MECHANICAL STOKER—W. H. Smyth, Berkeley, Cal.
671,096.—BASIN MAKER—C. J. Stoneham, Sierra Madre, Cal.
671,074.—HITCH BLOCK—M. C. White, Los Angeles, Cal.
671,075.—PHOTO PRINT WASHER—T. White, Vallejo, Cal.
34,317.—DESIGN—A. Heunisch, S. F.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

GRAIN SEPARATOR AND CLEANER.—No. 671,043. April 3, 1901. Daniel Best, San Leandro, Cal.

This invention relates to an apparatus for separating grain from chaff and foul material with which it may be associated after threshing, and for cleaning it. It consists in the combination with a threshing cylinder, inclined grain carrier, and separate straw carrier of a stationary horizontally disposed screen located below, an endless traveling belt with transverse slats moving over the upper surface of the screen, and fans located beneath and discharging an air blast upwardly and rearwardly through the screen.

HAIR AND SCALP BRUSH.—No. 671,047. April 2, 1901. H. H. Fox, Spokane, Wash.

This invention relates to a brush designed as a means for applying a tonic or shampoo liquid to the scalp and the hair, and consists of a rubber bulb carried upon the handle and holder, teeth projecting upon the opposite side having connection with the interior of the bulb whereby a liquid contained therein may be applied to the scalp, and proper friction maintained on the same.

BED BOTTOM ATTACHMENT.—No. 671,068. April 3, 1901. John Hoey, San Francisco, Cal.

The object of this invention is to provide a finish for the ends of the transverse frames of bed bottoms, to provide a means for supporting the bottom from the side rails of the bedstead so as to hold the wire bottom at the proper elevation, at the same time to allow the side rails of its frame to hang unsupported inside the bedstead rails. It also provides a means for stiffening and retaining the top mattress in place, and for securing the spiral springs beneath the woven wire bottom, so that they will remain in an upright position and not slip out of place.

Highest Efficiency.

Minimum Power.

Fulton Pump

Continuous Flow.

Where Deep Well Pump is Required.

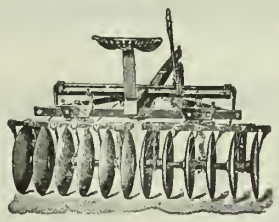
For any Service

Fine Valves.

Fine Cylinders.

Phosphor Bronze Valves.

A. T. Ames,
Manufacturer, Galt, Cal.



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Made in three sizes, 4, 5 and 6 feet cut, with 16 in. or 20 in. Discs.

The PACIFIC is the BEST REVERSIBLE and ADJUSTABLE DISC HARROW on the market. A Perfect Vineyard Disc.

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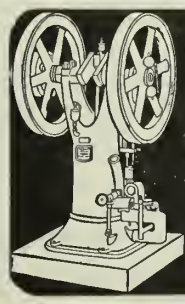
16 and 18 Drumm St., San Francisco, Cal.



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1½ & 2½
ACTUAL HORSE POWER
GASOLINE ENGINE
GUARANTEED
CATALOGUE MAILED FREE
WOODIN & LITTLE
312 MARKET ST.
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The Fresno Scraper.
3½—4—5 Foot.

FRESNO AGRICULTURAL WORKS,
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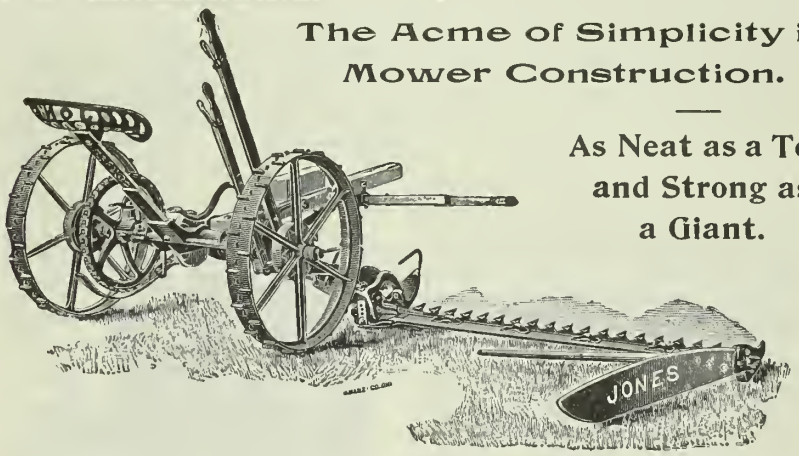
SPENCER'S

ALLIGATOR BOX PRESS
can bale 22 tons of hay in 10 hours or
NO PAY.
Circulars Free.
J. A. SPENCER, 25 Williams Street, Dwight, Ills.

"We make the most fencing because we make the best. The kind you want. Write American Steel & Wire Co., San Francisco, Cal."

The Acme of Simplicity in Mower Construction.

As Neat as a Toy and Strong as a Giant.

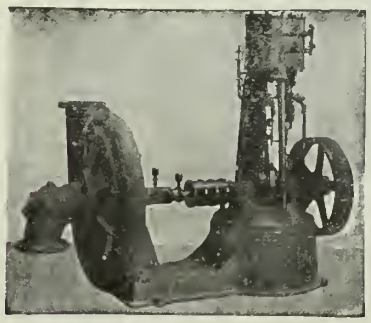


THE JONES CHAIN MOWER.

No Noise. No Vibration. No Lost Power. No Cog Wheels to Wear Out.

Everybody knows that the sprocket and chain produces far less friction than cog wheels; that they are longer lived; that the application of power is more direct. Then why buy a geared mower that may work well enough when it is new and the gears fit closely? But it soon commences to wear, loss of motion occurs, and in a short time you need a new mower.

THE H. C. SHAW COMPANY, State Agents, STOCKTON, CAL.

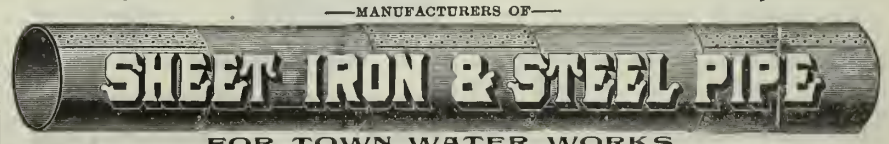


CENTRIFUGAL PUMPS
FOR
IRRIGATING or DRAINING.

We guarantee the efficiency and durability of our pumps.

BYRON JACKSON MACHINE WORKS, - SAN FRANCISCO, CAL.

FRANCIS, SMITH & CO.,
—MANUFACTURERS OF—



FOR TOWN WATER WORKS.
Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.
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Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with Asphaltum

Patrons of Husbandry.

Woman's Work in the Grange.

The Committee on Woman's Work in the Grange submits a partial report of their first meeting for the year 1901 to the Granges of the State of California, and calls the attention of all Granges, and especially the Sisters, to the work proposed and earnestly urges their co-operation in carrying out some one or more of these plans, knowing that the life of the Grange consists in the activity of its members and the interest each one takes in the upbuilding of the Order.

FRESH AIR WORK.—The committee recommends that the Sisters of the Grange interest themselves in finding places of entertainment for children and young people from the towns and cities. Any one willing to care for children for one or two weeks by writing to any member of the Committee on Woman's Work will receive information concerning those who are worthy of this great kindness. Great care will be taken in selecting those who will be sent into the country. Railroad fare will be paid both ways.

BOOK CLUBS.—The committee recommends the forming of book clubs within the Grange, and seek for members not alone in the Grange, but outside the Order. Make this a means of keeping in touch with the new books of the day, the lack of good reading matter being one of the drawbacks of living in the country. Get a membership of from ten upwards, each member depositing $1 or more, as circumstances allow. Have a president, secretary and book committee, whose duty it shall be to buy the books. Each member has the right to send in a list of books to be bought, from which the book committee will select the most desirable. These books can be bought from most dealers for 20% discount. This will form a nucleus for a circulating library among yourselves. Have a social meeting occasionally to talk over the books you have read. Your committee feel that there are great possibilities in this book club work, and trust the Sisters throughout the State will see its importance, and thus help not only themselves to many happy hours but help in this way to build up the Order.

FORESTRY. — Forestry opens up a wide field of work for women. The success of our beautiful State depends so largely upon the preservation of our forests, and discussions of this subject in the Grange will keep its importance before the people. Few realize what the destruction of our forests means to the State of California.

EDUCATIONAL WORK.—This subject is large, embracing so much that is vital to the home, the Grange and the community. From the many subjects that present themselves for our consideration we select a few: That women work for a change in the laws that will give to women the same property rights as are now accorded to men, namely, that upon the death of the husband the wife shall have the same right to the control of the community property as the man now has on the death of the wife; that we work for the enfranchisement of women; that in the children lies the hope of the future of our fair country.

The committee recommends the forming of mothers' clubs, whereby the mother and teacher can keep in touch. Mothers' clubs have already been formed in many localities. These clubs are of great importance in the community. The papers read and discussed comprise a great variety of subjects, all pertaining to the health, happiness and well-being of the children. The importance of instilling the principles of honesty, honor and courage into the minds of the young cannot be overestimated.

HOUSEHOLD SCIENCE.—Under the head of household science we would urge the importance of teaching the children practical lessons in the home on the value of foods and the injurious effect of adulteration in food—that the food we eat works itself into our thoughts and actions, and affects the character of individual life.

LECTURER'S WORK.—The committee urges the Lecturer and Master to use their best efforts to encourage the Sisters to participate in the work of the Grange, and to that end we would suggest that every third or fourth meeting be set apart as a day on which the Sisters shall take a prominent part in music, papers on different topics, discussions and a basket lunch. Make the social life of the Grange of importance, and your Grange will grow and prosper.

Trusting that every member of every Grange in the State will give these subjects—one or more of them—their earnest consideration and attention, that they will appoint one member to correspond with the chairman of the committee, that we may keep in touch with the work being done in the Granges throughout the State in this important Grange work—G. W. Worthen, Master, San Jose; Mrs. N. A. Sanders, Cupertino, Cal.; Mrs. Elizabeth F. Fowler, Berkeley, Cal.; Mrs. Caroline F. Emery, 1194 East Fifteenth street, East Oakland, Cal.; Mrs. S. J. Cross, 614 East Twenty-eighth street, East Oakland, Cal.; Mrs. M. J. Worthen, San Jose, Cal.; Mrs. S. P. Sanders, Cupertino, Cal.

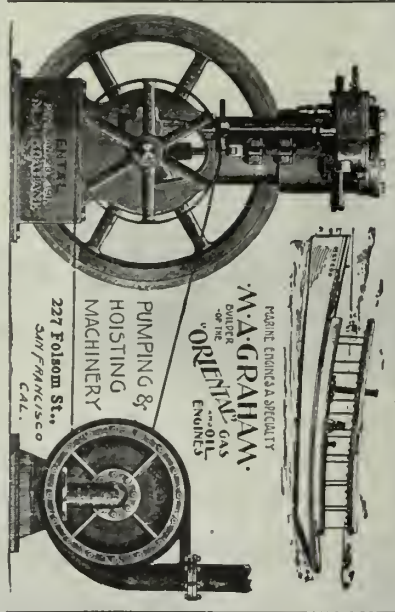
Fine Cotswolds.

Seekers for fine mutton sheep will be interested in the announcement of Cotswolds in this issue by Kirkpatrick & Whittaker. This old and well known firm returns to the activity of which we used to speak approvingly in these columns. We are glad conditions are right to warrant their taking hold again in the advancement of the sheep interests of the State by offering good stock through our advertising columns.

Spray your Fruit Trees and Vines

Wormy Fruit and Leaf Blight of Apples, Pears, Cherries and Plums prevented; also Grape and Potato Rot—by spraying with Stahl's Double Acting Excelsior Spraying Outfits. Best in the market. Thousands in use. Catalogue, describing all insects injurious to fruit, mailed Free. Address

WM. STAHL, QUINCY, ILL.



Cooper's Sheep Dip.

Leading Dip of the World Sixty Years.

USED ON 150,000,000 YEARLY.

Not a refuse product of tobacco or dye factories.
A sheep dip invented and made specially for sheep.
You are asked to use it because it is the best.
It occupies a supreme position in all countries.
It is free from objections so common in others.
It cures without injury. No smell.

General Agents, SHOOBERT-BEALE CO., 222 SANSOME ST., SAN FRANCISCO.

BIG USERS OF CREAM SEPARATORS.

The Continental Creamery Co., Topeka, Kan., uses 175 De Laval Power separators. The Elgin Creamery Co., Chicago, uses 150. The Borden Condensed Milk Co. uses about that many. The Beatrice Creamery Co., Lincoln, Neb., uses 135.

The Franklin County Creamery Association, St. Albans, Vt., uses nearly 100. So does the Standard Butter Co., Owego, N.Y.

The Brady-Meriden Creamery Co., Kansas City; Parker Creamery Co., Hutchinson, Kan.; and John Newman Co., Elgin, Ill., all use over fifty machines each.

The St. Marys Creamery Co., St. Marys, Ont.; Fairmont Creamery Co., Fairmont, Neb.; McCanna & Fraser Co., Burlington, Wis.; Belle Springs Creamery Co., Abilene, Kan.; Forest Park Creamery Co., Edgerton, Kan., and the Hesston Creamery Co., Newton, Kan., all use from 25 to 50 machines

All these are large Power machines, costing $500.- to $800.- each. In addition some of these concerns have hundreds of "Baby" De Laval machines scattered among their patrons.

Every concern named, as well as every other large user of separators, now uses and purchases De Laval machines exclusively.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS., CHICAGO
103 & 105 MISSION ST., SAN FRANCISCO
General Offices: 74 CORTLANDT STREET, NEW YORK.
1102 ARCH STREET, PHILADELPHIA.
327 COMMISSIONERS ST., MONTREAL.

The BUTTER SCORING the HIGHEST 98 POINTS

At the National Creamery Buttermakers' Convention, St. Paul, Minn., Feb. 18 to 23, 1901

Was the Product of the U. S. Separator

This butter was made by **Edw. H. Webster, Ames, Ia.,** and scored **one point higher than the butter entered by Mr. Quenvold,** which received a Gold Medal.

Mr. Webster's butter **was entered for scoring only,** therefore could not compete for the prizes, which explains why the Medal was given to the butter scoring second highest and not to the butter that was really the best.

Our "would-be competitor" claims to have had 35 times as many entries at the Convention as the United States, and for all the latter had so few chances, in comparison, of winning yet the **Judges reported the U. S. product the Best out of 829 packages,** another proof of the

SUPERIORITY of the IMPROVED U. S. SEPARATOR

We also call attention to the

GOLD MEDAL IN THE GATHERED CREAM CLASS

which was awarded **W. C. Noble, So. Waterford, Me.,** whose butter was **the Product of Improved U. S. Separators and Cooley Creamers.**

Remember we are Pioneers in the Cream Gathering System and lead in that the same as in everything else in the Dairy and Creamery line.

When you see our "would-be competitor" claiming everything at the Convention, just bear the above facts in mind, also that

THE BUTTER SCORING THE LOWEST, 75½ POINTS, WAS THE PRODUCT OF THE DE LAVAL SEPARATOR.

Write for Circulars telling of many other victories of the U. S.

VERMONT FARM MACHINE CO. - - BELLOWS FALLS, VT.

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California Fruits.

NEW EDITION (3rd)

By E. J. WICKSON.

Professor Agricultural Practice University of California; Author of "California Vegetables in Garden and Field;" President California State Floral Society; Horticultural Editor Pacific Rural Press of San Francisco.

Large Octavo; 470 Pages; Profusely Illustrated, 12 Full-Page Plates.

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PACIFIC RURAL PRESS, Publishers,
330 Market Street, San Francisco, Cal.

Publishers of the "Pacific Coast Poulterers' Hand-Book and Guide." PRICE 40c.
Manufacturers of Pacific Incubator and Brooder, Send for Catalogue.
OAKLAND POULTRY YARDS, 1317 Castro St. Oakland, Cal.

JUST AS NATURAL as the old hen and a good deal more reliable. Doesn't break its eggs or make its chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched. THE PETALUMA INCUBATOR
Beats 'em all.
is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 54 to 324 eggs. WE PAY FREIGHT ANYWHERE in the U. S. Handsome catalog free. Petaluma Incubator Co., Box 217 Petaluma, Cal.

COTSWOLD RAMS.
Eighty head of imported Cotswold Rams for sale.
May be seen at Crows Landing on San Joaquin river. For mutton lambs they are unexcelled.
Inquire of KIRKPATRICK & WHITTAKER, Stockton, Cal.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

POULTRY.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: Barred Plymouth Rocks and Single-Comb White Leghorns. Write for wants. Fine roosters for sale. Eggs $1.50 per setting of 15. Incubator lots $5.00 per 100.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

FOR THOROUGHBRED FOWLS in small lots, address Cottonwood Farm, Pleasant Grove, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

BRONZE TURKEYS A SPECIALTY. Birds and eggs for sale. Send for circular. Ed. Hart, Clements, Cal.

MEAT MEAL. Best quality. Lowest price. A. Warren Robinson, Napa, Cal.

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S. P. LINDGREN & SONS, Kingsburg, Cal. For sale, Poland-China pigs from registered stock.

BERKSHIRE HOGS, headed by the great boar Artful Lee 52630. S. B. Wright, Santa Rosa, Cal.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

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J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs.

BERKSHIRE BOARS. C. A. Stowe, Stockton, Cal.

BREEDERS' SUPPLIES.

POULTRY supplies of all kinds. Send for my new price list and booklet, "HOW TO FEED FOWLS FOR PROFIT." CROLEY, 508 Sacramento St., San Francisco, Cal.

WE WANT A RELIABLE PERSON in each town of less than 8,000 inhabitants to distribute circulars and samples for large advertisers; cash paid, pleasant work, no scheme. Address MOLTON DISTRIBUTING AGENCY, CLEVELAND, O.

THE STOCK YARD.

Next Hereford Sale.

To the Editor:—In order to meet the continued increasing demand for Hereford cattle, several of the oldest Hereford breeders west of the Mississippi river have concluded to meet the prospective buyers scattered over the short-grass country half way, as it were, and hold occasional public sales at Denver, Colo. The following well-known and extensive breeders, whose herds now aggregate over 3000 head of registered cattle, with A. J. Bothwell of Denver, president of the Western Breeders' Association, have joined for a combination sale of 150 head, to be held at the Denver Union Stock Yards, Monday and Tuesday, May 6th and 7th: Gudgell & Simpson, Independence, Mo.; Scott & March, Belton, Mo.; C. A. Stannard, proprietor of the noted Sunny Slope Farm, at Emporia, Kan., and Lowell, Barroll & DeWitt, Denver, Colo.

The offering will consist of bulls and heifers of as good breeding as can be found in their respective herds, and will be in that condition that fully insures future usefulness. The farmer that is desirous of a bull and a few females, or the ranchmen who want a car lot or more, will find this his opportunity to secure some of the best obtainable. This sale gathering will doubtless be strictly a direct buyers' meeting, as it is out of the range of the professional breeder for profit or the speculative-turn-of-mind jobber for profit.

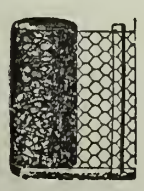
Way up prices are not anticipated, but such values as will meet the approbation of the buyer and reward the seller, as a breeder, for his pains—taken to breed the better class of beef cattle—will be acceptable. For further information consult the announcement found elsewhere in this issue and write for a free copy of the sale catalogue.

Kansas City, Mo. W. P. Brush.

Insecticide Soap.

An interesting instance of the wide reciprocity in trade is seen in the announcement in our advertising columns by V. Casazza & Bro. of New York that they have been appointed sole agents for the United States and Canada of a famous insecticide soap made by E. Giachino of Italy. This preparation is fully described in a catalogue of which a copy can be had by application to Casazza & Bro., and it has received most distinguished medals and diplomas in Europe.

BLACK LEG ...VACCINE.
During the past two years our vaccines have been used on several thousand head of cattle in the worst infested districts of California and with the best of results, giving entire satisfaction and proving an exceedingly profitable investment to the stock owner.
Every lot is tested and found reliable before a single dose is put on the market.
Write for literature and testimonials.
The Cutter Analytic Laboratory,
Bacteriological Dept., FRESNO, CAL.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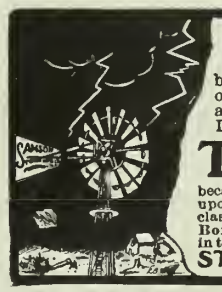
LOW PRICES.
Wire Cloth, Prune Dippers, Graders, Etc
West Coast Wire & Iron Works, 5 Fremont St., San Francisco.

Cocoanut Oil Cake.
THE BEST FEED FOR STOCK, CHICKENS AND PIGS.
For sale in lots to suit by
EL DORADO LINSEED OIL WORKS CO.
208 California St., San Francisco, Cal.

AMERICAN AND FOREIGN PATENTS
CAVEATS. TRADE MARKS.
DEWEY, STRONG & CO.
330 MARKET ST. S. F.

YERBA BUENA RANCH.

KATHLEEN'S ROY of Y. B. No. 52030, A. J. C. C.
DROPPED 1897. IMPORTED 1898.
Sired by Kathleen's Son No. 17660, A. J. C. C., who, with two of his daughters, won the first prize at the New England Fair, held at Rigby Park, Maine, in 1898. This is the third year in succession that the blood of this bull has taken most of the prizes at these great fairs, where six States compete. He was bred at Mr. Pierce's Saddleback Farm, East Baldwin, Maine. Took Sweepstakes over all Jersey Bulls in 1899 and 1900 at California State Fair.
The get of this bull, in individuality and looks as well as breeding, are the equal of any. I have some young stock from this bull, as well as by the celebrated "El Toro of Y. B. No. 24434, A. J. C. C., whose likeness will follow this in this space.
If you want a good bull, you need not go to the expense of sending East when you can get the equal of any out of this herd for about what it will cost for transportation from the East, after paying a long price for same. Write for further information.
HENRY PIERCE, 728 MONTGOMERY ST., SAN FRANCISCO, CAL.


It Stands the Storms
better than any wind mill ever invented. This is not only true because of the unusually well constructed and thoroughly trussed and braced angle steel tower, but because of the great strength of the mill itself. It has a way of adapting itself to severe shifting winds.
The Samson Wind Mill
because of its many points of superiority, sprung into popular favor immediately upon its introduction, and is now the recognized leader among machinery of this class. The powerful Double Gear with center line draft, long Interchangeable Boxes, freedom from all torsion and overhanging strain, make it the strongest in the world. Don't buy until you investigate this mill. Samson Art Catalog free.
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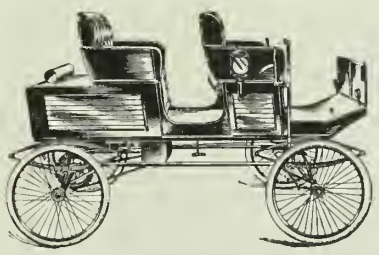
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The "Locomobile" Company OF THE PACIFIC.
STATIONS: 1255 Market Street, San Francisco. 103 South Broadway, Los Angeles. 106 Telegraph Avenue, Oakland.
Your choice in nine different styles. Ladies can operate them. Sold in guaranteed condition at reasonable prices. Illustrated catalogues and information will be sent on application.

SQUIRRILIN
A virus for destroying ground squirrels or "gophers."
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THE LYNWOOD HERD OF SWINE
is still in the lead. Reports from the THREE GREAT FAIRS of the Pacific coast show that after meeting the best herds in California, Oregon and Washington, we can rightfully claim to have the Champion Herd of the coast. Look at the record: California State Fair, 15 ribbons; Oregon State Fair, 18 ribbons; San Francisco and San Mateo Fair, 20 ribbons, making a total of 53 ribbons. Our large sales to visitors to the fairs show what they thought of the stock, and we have very few salable pigs left. If you are in need of stock, write us and we will describe what we have.
SESSIONS & CO., 117 E. 23rd St., Los Angeles, Cal.

EMERY'S PURE MEAT MEAL
FOR POULTRY.
This meal is the highest grade goods on the market. We guarantee it ABSOLUTELY FREE FROM ANY DISAGREEABLE ODOR. It is PURE MEAT and costs no more than cheap tankages. Send for sample. It will surprise and please you.
EMERY FERTILIZER CO., INDIANA AND 24TH STS., SAN FRANCISCO, CAL.

THE NEW EGG FARM.
By H. H. STODDARD.
A practical, reliable manual upon producing eggs and poultry for market as a profitable business enterprise, either by itself or connected with other branches of agriculture. It tells all about how to feed and manage, how to breed and select, incubators and brooders, its labor-saving devices, etc. 12mo., 331 pp., 140 original illustrations, cloth. Price, $1 postpaid.
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"Greenbank" Pure 100% Caustic Potash and 98% Powd. Caustic Soda.
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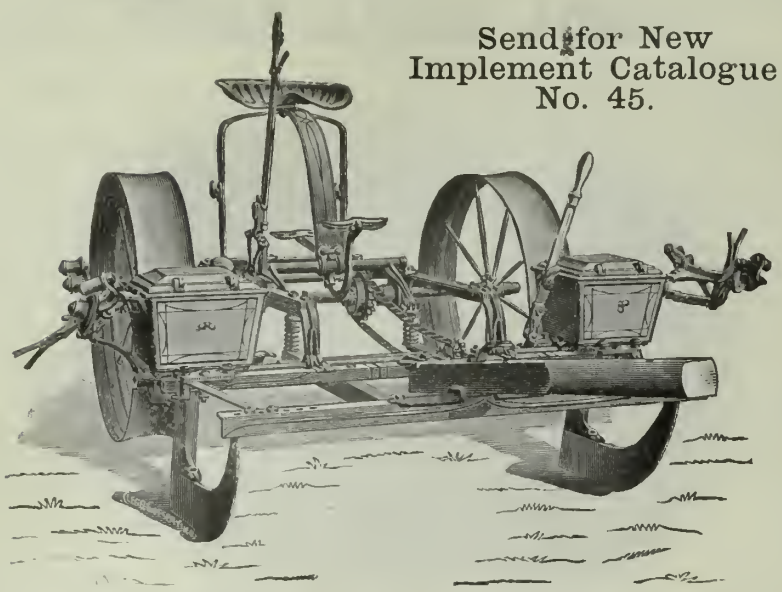

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We have a stock of the Latest Improved CREAMERY and DAIRY MACHINERY and Supplies, and make a specialty of furnishing and installing complete outfits. Our creamery and engineering experts give careful attention to our proposed installations.

Send Us a Postal for Our 1901

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SACRAMENTO.
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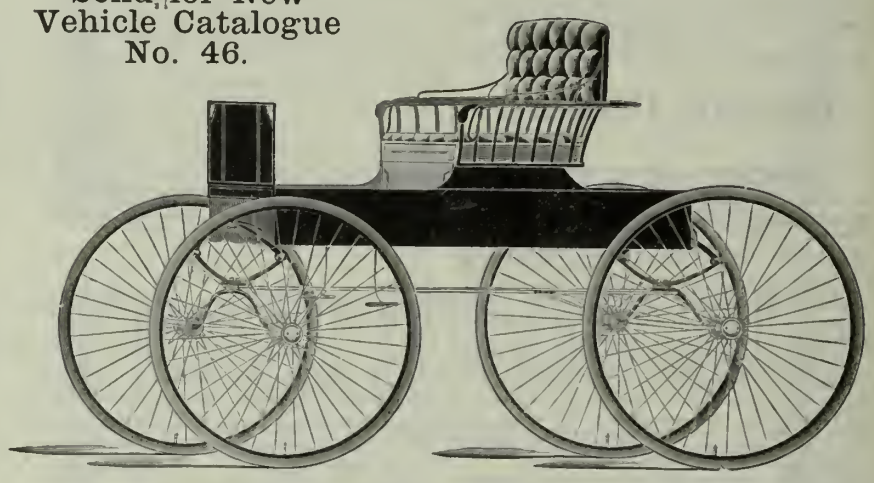
Manufactory: BENICIA AGRICULTURAL WORKS, BENICIA, CAL.

Send for New Vehicle Catalogue No. 46.



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A Side-Hill Combined Harvester in the Field.

HOLT BROS.

ORIGINAL LINK BELT

Combined Harvester.

THE GREAT FAVORITE OF THE FARMERS.

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"MINNESOTA CHIEF" THRESHERS and SELF-FEEDERS.

Mr Chanticleer.—"Its no use scratching over this straw, Biddy, it was threshed by a Minnesota Chief"

A FULL LINE OF

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Leather and Rubber Belting.

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183-185-187 FREMONT STREET,

Where, with Enlarged and Increased Facilities, they are better than ever prepared to do

First-Class Machine Work

Promptly, and at Reasonable Prices, and will continue the manufacture of

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Also Marine Engines, Ship and Steamboat Work, Pipe Cutting, General Jobbing and Repairing

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 17. SAN FRANCISCO, SATURDAY, APRIL 27, 1901. THIRTIETH YEAR. Office, 330 Market St.

In the San Gabriel Valley.

We turn again this week to southern California for a brace of interesting views, befitting the season and significant of courses of things. It is the time when California makes her finest display of winter fruits and flowers. It is true that roses and oranges have been associated all winter, and in particularly sheltered spots were possibly in better display a few weeks ago than now, but a little springtime heat brings the freest rose blooming and helps the orange to the depth of gold, which comports best with its depth of green. The rose which the engraving shows is a little dilatory in its blooming as compared with other varieties; but when it does burst forth, nothing can excel it in its varying hues and its gorgeousness. It is often called the Gold of Ophir, but that name belongs to an inferior rose. The rose shown in the picture is probably more truly named as the Beauty of Glazenwood. It is not a constant bloomer, but prefers to store up its vigor for grand bursts of bloom. Meantime, it extends itself over houses, trees or whatever other support is within reach, so that when its bloom comes it has reached a spread of branches which makes its display exceedingly impressive. Those who have been disappointed with this variety in harsher climates will all the more fully appreciate its vigor and freedom of bloom in those parts of California which best please it. The variety is most effectively used in southern California, though there are also very large and satisfactory specimens at different places in the central regions of the State. It is difficult to find anything handsomer in our horticulture than the association of this rose with the hues of the orange tree, as shown in the engraving. The photograph was taken in Los Angeles county. The roses in this case are probably unsupported except by their own growth. Starting with a small plant tied to a stake, a few years' growth in a favorable place and with enough water will transform the little cutting into a mound of foliage and bloom held in place by the strong tree-like branches which the rose forms within.

Another picture is in the San Gabriel valley, near Los Angeles—the spot where the old padres a century and a quarter or more ago established a Mission, of which the main building stands to this day, and in slightly modernized form is still used for public worship. The old mill shown in the picture was built over a century ago—in 1790, it is held—and it, too, has been somewhat "improved" by more recent builders. It has a modern roof and cornice, new windows have pierced its thick adobe walls and a porch of early American carpentry has been grafted upon its side; but this is itself old enough to be curious at this late day. The walls are, however, of the earlier date, and the peculiar strengthening of the corners with the conical buttressing is very interesting. The environment of the old mill is mostly of recent growth, though possibly the old olive, of which some of the foliage shows on the extreme right of the picture, may be one of the original trees, whose product the old mill reduced to oil for the delectation of the padres. Evidently in its later years the building has done service as a dwelling, but there remains enough of its original lines to make it very expressive of the old regime, and it is pointed out with pride to the tourist who is offended by the newness of the country and desires ruins to rave over.

Roses and Oranges in a Southern California Garden.

The Old Mill at San Gabriel, Los Angeles County.

California took a hand in a recent Holstein-Friesian sale in Syracuse, N. Y., where 136 head brought $15,000. The highest price, $500, was paid for a cow and calf—Lady Netherland Paladin and Netherland Paladin Spafford. J. A. Yaukum of San Fráncisco bought thirty head for R. M. Hotaling of Marin county for $2997.

The Raisin Growers' Association have had printed 1,000,000 folders containing simple recipes of Chef Otto of the Waldorf-Astoria of New York for cooking raisins. One of these folders will be inserted in every raisin package sent out from Fresno.

Uncle Sam is going into orange growing on his new islands. Among the shipments by army transport to Guam last week were 500 good-sized orange trees.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, April 27, 1901.

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The Week.

The beautiful weather continues thus far and delights all except those who have crops in danger of drying up and orchard land that needs shaping for the summer. The weather-wise, who see beyond the Weather Bureau, discern signs of rain, and we hope their telescopes are of good quality. The cool weather and absence of hot, dry winds is helping prolong the verdure, and it may hold on until help comes from the clouds. A hot wave just now would cost millions, for it would pinch nearly all kinds of vegetation. Let the water come first and give us some better resistance to heat than we now have.

The dry weather is affecting the cereal markets. Wheat and barley are both higher and firmly held at the advance. Oats are steady at the high range of values last quoted. Corn is against buyers, and is difficult to obtain in this center in large quantity at any figure. New hay is being cut and is expected to soon put in an appearance; prices for old are in the same groove as for months past. Millstuffs market shows decided firmness, in sympathy with higher figures current for whole cereals. Beef is a little easier and hogs are selling slowly at the rather high prices ruling. Mutton is meeting with good custom at the recently reduced rates. Poultry market has been against the producer for common old and small young; large and fat young fowls were the only kind which were scarce and sought after. In the dairy produce market there was little change in prices for either butter or cheese, but there was more offering than was warranted at top figures. Eggs are going into cold storage, but are not cleaning up promptly at full prices. Onions are almost a luxury, although new red are beginning to arrive. Old potatoes of good to choice quality are bringing advanced values. The first new potatoes of the season in boxes arrived to-day (Wednesday) from Sacramento river. New potatoes in sacks are showing increased receipt. Cherries are coming forward and are selling at a very wide range, with great difference in quality. Oranges were more plentiful and market more favorable to consumer. Lemons ruled quiet at old figures. In dried fruits the only movement worth noting is in evaporated apples and 2-cent prunes. Apples are firmer and prunes should be. Wool buyers are in the field, but are looking mainly for choice of short staple. Hops are lifeless, with wholesale market practically bare.

We trust readers will notice the announcement on another page of the summer school of the University of California at Berkeley. It will afford an opportunity to those who wish to spend a few weeks amid academic scenes and the cool air of the coast to combine education and recreation and change of scene. The agricultural teachers of the University hope to meet many practical farmers, young and old, who wish to give a limited time to a consideration of agriculture as viewed in the light of underlying sciences and up-to-date practice. Many whom we meet in the country have expressed a desire to do this, but the time requirements have been too great. Here, then, is a condensed course which will perhaps suggest more than it directly teaches, and thus be permanently valuable and enduring in its lessons. President Wheeler and his staff desire to make this new departure in local university work memorable and useful, and success in this direction will be conditioned upon the interest manifested. Let all come who can. Come and bring the family for a summer in Berkeley.

In view of the frost injuries to fruits and the general expectation of a small crop after a very large one, growers seem fully warranted in calling upon the directors of the Association to return the price of prunes to the 3-cent basis as soon as the 2-cent limit shall expire. This limit will be reached before this issue of the PACIFIC RURAL PRESS reaches its readers, and unless some extension is made the price will rise automatically. There must be a large carry-over, either in the hands of growers or of speculators, and the growers seem disposed to be their own speculators, in view of the outlook for the coming crop.

The Fresh Fruit Association, which is undertaking to develop a shipping business in the hands of the growers, has secured the services of A. R. Sprague of Los Angeles, president of the Southern California Deciduous Fruit Exchange, to launch their venture for them and act as manager this summer. Mr. Sprague is a strong man in this line and will do more in advancement of the enterprise than any man we know of. We consider the choice an excellent one.

The prune problem continues the uppermost subject in many minds. A meeting of members of the Cured Fruit Association has been called by the president, to be held in San Jose on May 2, for the nomination of officers to be voted for at the annual meeting on June 5. There seems to be some doubt whether any business can be transacted at the nominating convention unless a majority of the entire membership is represented in person or by ballot. All are urged to be personally present at the nominating convention, as the work of that convention will be of the utmost importance to the Association and its members. The only matter to be submitted to the convention will be the nomination of officers of the Association to be voted for at the annual meeting. It does not seem to be possible just at present to state just how the Association stands financially. A large part of the growers have not received their part of the 1 cent per pound which has been distributed to those who delivered their prunes to the Association at the earlier dates, and the problem now seems to be to sell enough prunes so that all members may stand alike, with 1 cent per pound in their pockets. Probably by the meeting of May 2 something more definite may be ready, and certainly every member who can possibly do so should attend.

The outlook for grape prices is naturally brightened by the reports of frost injuries to the vines. Growers have made every effort to put their vines in the best possible shape to make new growth from dormant buds, and no doubt all the crop that can be secured will be zealously guarded from this on. A San Francisco dealer has been entertaining the Napa growers with the prophecy that at least for the next ten years the price of grapes will not again go below $15 per ton, and the price will range usually as high as $20. The reason for this is that the demand has increased beyond the supply, owing to opening of new markets in the Indies, Hawaii, Cuba and elsewhere with free entrance for our products. In addition to this, times have improved greatly in the East, and more wine is being drunk than ever before. The newer vineyards have not come into bearing yet, and not for at least four or five years yet will the product of new plantings be materially felt.

QUERIES AND REPLIES.

Those Australian Onions.

TO THE EDITOR:—Onions raised in Australia are retailing in this market at 10 cents a pound. Onions are shipped here every year from Oregon. The kinds raised here do not keep and so we are soon out of local grown onions and then begin importing them for home use. Is there any valid reason for this? Our people raise mostly a big red onion, and then there are many white onions; but neither seems to keep. Are there not varieties which will keep? The demand for onions among our poultrymen is constantly increasing, and the same may be said of garlic, neither of which can be grown around Fresno except for early use after they are "pulled." The onion grows splendidly here, and it is our opinion if we had the proper variety we could produce and carry into the winter and early spring all the onions our people need. Please enlighten us on the question.—MCINTOSH & FAY, Fresno.

The fact that Australia can market sound onions in California at this time of the year is due to the difference in seasons in northern and southern hemispheres. It is now the beginning of winter in Australia and the onions which they have been sending to us were shipped as soon as they could be gathered at the close of their growing season in that country. We can return the compliment to them by shipping our onions as soon as ready, a few months hence, and there is some trade of that kind. Thus you will see that the fact that Australia can furnish us sound onions now is not due to variety, but to the fact that their growing months are just the opposite of ours. The only way which seems feasible to keep onions in good condition for spring market in California is by recourse to cold storage. This is sometimes practiced, but there was such a sharp demand for onions last fall for shipment, and the crop was somewhat reduced by the dry weather, that supplies were practically exhausted and prices too high to warrant storage. It is probable that late-keeping onions would be harder to grow in your climate than in parts of the State nearer the coast, where the season is considerably later and growth is slower because of the lower summer temperature. We may be able to get better keeping varieties than those now grown in this State, but cannot expect to settle the matter in this way.

Spring Treatment of Peach Moth.

TO THE EDITOR:—We used the winter spray of kerosene emulsion to kill the larvæ of the peach moth in their winter quarters, as you advised us to do. It seemed to be a good job, but there is now some sign of the worms in part of the orchard. What can we use now? Kerosene emulsion will not do much now, and some say that the Bordeaux mixture is of no account for the worms. How would whale oil soap solution do?—GROWER, Newcastle.

It is difficult to give perfectly definite information as to the best thing to use in spraying at this season for the peach moth. The kerosene emulsion would not work unless it just happened to strike a worm exposed at the moment. Its effects would not be lasting. The Bordeaux mixture, unless Paris green is added, would not particularly interfere with the peach moth, either. If you find it desirable to use the Bordeaux mixture for fungus diseases, simply add one pound of Paris green to each 200 gallons of the Bordeaux mixture, then you will have a combined fungicide and insecticide, which will kill the peach moth, if he takes a bite at it. Whale oil soap and water would seem to be a better spring treatment for the peach moth than kerosene emulsion, because it would be likely to stick to the tree longer, and in that way might discourage the young worms. We need more definite experimentation with reference to this spring treatment of the peach moth. Most success seems to be attained by the Paris green with the Bordeaux mixture, or by the Paris green, at the rate of one pound of Paris green to 300 gallons of water, the poison being mixed into a paste with a little lime before it is added to the water. The peach tree is quite sensitive to the arsenic, and the wash has to be much weaker than is used for other trees.

Our Fine Export Potatoes.

TO THE EDITOR:—How can I get the best data on irrigation in California? How do you raise those fine Irish potatoes which are shipped over here?—READER, Dallas, Texas.

The irrigation subject is so broad that it is very difficult to indicate to you the best data for the pur-

pose you have in mind. The most systematic information on certain phases of irrigation is now being published by the "Irrigation Investigations" of the Department of Agriculture at Washington, and for these publications you should apply to the Secretary of Agriculture, Washington, D. C.

As for the fine Irish potatoes which are being shipped to you, it is something of a question whether they are irrigated or not, because we are growing potatoes both with and without irrigation, and the earliest potatoes are usually grown by the winter rains in places where there is never frost enough to injure a potato plant. In irrigation of potatoes care has to be taken to keep the plants growing progressively, not allowing them to come to a stop and then applying irrigation water, because that always forces a second growth of undesirable tubers. In places where the winter rainfall is a little short late potatoes are grown by a thorough soaking of the ground with about 12 inches in depth of irrigation water, after that plowing and planting, and with the aid of cultivation and occasional showers good potatoes are grown without further irrigation. Potato growing where the winter temperatures are too low for this practice is done by irrigation in a very simple way, viz., by allowing the water to flow down a furrow between the rows occasionally, as the local soil requires, each irrigation followed by cultivation and leveling of the ground.

Rye Grass.

To the Editor:—Will you tell me about rye grass? I have sowed twenty-five acres on river bottom which is a little too low for alfalfa. Will it stand more water than alfalfa? How does it compare in feeding qualities? How many crops a year will it produce? Will red top stand more water than rye grass? How does it rank for cattle feed?—Will Strother, Salida.

Rye grass is, on the whole, the most satisfactory grass ever introduced into California. It will live through the summer in all but the driest soils and situations. It will make a wonderful growth on low, wet lands, and will stand overflow for very long periods and can be counted safe where alfalfa will drown out. Its feeding quality is fair; it is much less rich than alfalfa, but it gives good winter feed when alfalfa is shy. It is not to be regarded as a substitute for alfalfa where this plant will do well, but it is a very good supplement to alfalfa. It will produce immensely where it has moisture enough and will stand repeated cuttings. It has a record of over 100 tons to the acre (green weight) when grown with sewage irrigation. How much you can cut depends upon how your moisture holds out. We can not give much about red top except that it has been in California about as long as rye grass and has made no such widely favorable impression.

Sour Sap.

To the Editor:—My apricot trees seem to be dying—a limb at a time, after the leaves were about half grown. I see a great many knobs of gum on them. They did not blossom very much at the time of blooming; but, after the first blossoms were off or grown to fruit, other bloom came on. They were extra large blooms, but did not make fruit. What is the cause of it? Can it have been the wet weather? Is there any remedy?—Grower, Sheridan.

To the Editor:—I have about 250 four-year-old peach trees affected with the sour sap. Will you kindly advise me if there is any remedy for the same. —Orchardist, Bird's Landing.

To the Editor:—I have two peach trees in my orchard that have been set out three years this spring; they bloomed and leaves started out, but now they seem to be dying, the leaves falling. What is the cause and cure, if any? They were thrifty trees and bore fruit last season.—W. J. Scott, Dos Palos.

To the Editor:—I have on my place at Clovis some ten acres of Robe de Sergeant prunes, now in their sixth year. They have made big trees, and this spring bloomed heavily and promised a good crop; but, on leafing out, some 25% to 30% of them dried up, and, on examination, I found the bark a dark-brown, smelling as if sour.—J. E. Hewett, Fresno county.

We are not surprised at the prevalence of this sort of trouble this spring. There is a sour sap of the twigs and branches, which is caused by frost after the growth has started and the twigs are full of sap. The manifestation is a collapse of the foliage and gumming of the twigs, followed by die-back of the twig and sometimes of the branch. There is no preventive, for it is an atmospheric condition which is beyond control. The treatment is cutting back as soon as noticed, that the diseased sap may not pass below the injured parts.

There is another form of sour sap, which is caused by standing water in the soil, which destroys the root-hairs, and in that way cut off the normal sap supply and induces fermentation of the root bark. The immediate treatment for trees which have been injured in this way is to cut back severely, so that the draft upon the roots will be reduced as far as possible, until they have an opportunity to restore their root-hairs, which have been destroyed by the standing water. If the injury to these root-hairs is not too great, a tree thus treated will recover; but, unfortunately, many will be beyond relief. The only way to make such ground safe for trees is to provide drainage, so that standing water in the future may be avoided. Very great losses in this direction have been sustained during the last few years through planting such trees on land not suitable to them. Pears, plums and prunes on Myrobolan root will endure very much standing water during the winter time, but most other fruit trees are severely injured by it.

The Aughinbaugh Blackberry.

To the Editor:—Where can I get the Aughinbaugh blackberry?—Amateur, Oakland.

The Aughinbaugh blackberry has gone out of sight as a cultivated variety in this State, and we suppose it is impossible to obtain it from any of the nurserymen. We have not seen it listed for twenty years. Judge J. H. Logan of Santa Cruz, who has given much attention to the crossing of berries and the production of new varieties, had this variety on his place a few years ago, and may still have it. In such case we have no doubt he would take pleasure in furnishing you the plant. He is not in the business as propagator, but is very kindly in treatment of applications for exchange, etc., from other amateurs. At present we can only think of this recommendation to make to you.

Pear Scab.

To the Editor:—Are the inclosed pear leaves afflicted with blight? Sprayed several times last season and twice this one with Bordeaux. Was this right, or should the afflicted parts have been pruned out, as shown in your issue of April 6, "Facts and Fancies on Bear Blight"?—S. C. Lowe, Dos Palos.

The specimens show scab, not blight. You are doing the best you can for it. When you see twigs dying, cut below the injury as soon as you discover it.

Paris Green and Ammonia.

To the Editor:—I have always mixed Paris green with alcohol or ammonia before putting it in the water for spraying. The different formulas I see advise mixing in water only. Will you please say which is the better method and the reason why it is. —Old Subscriber, Walnut Creek.

Paris green thus dissolved is more apt to injure the foliage and will not remain so long in place on the leaf. If the insect is just ready to bite and the foliage is hard to hurt the dissolved Paris green may be better: otherwise worse.

Stocks for the Peach.

To the Editor:—Do you advise me to bud Muir peaches on apricot roots or any kind of a peach?—J. E. Hewitt, Clovis.

We prefer the peach or almond, though the Muir takes well on the apricot, we should choose the others.

Asparagus Boxes.

To the Editor:—What is the weight per box of asparagus as priced from week to week in the Pacific Rural Press, also dimensions of same?—L. T. Bassett, Redding.

The average weight of an asparagus box is about forty pounds net. The size of a Sacramento river box is 24 inches, full length of side pieces, 14 inches inside end pieces, 7½ inches depth. There is a top cleat running in about 2 inches at each end.

Figs in San Diego.

To the Editor:—Would the Smyrna fig be a good thing to plant in this county at an elevation of 2000 feet above sea level and 30 miles from the coast. We have temperature as low as 28° in winter and as high as 80° to 90° in summer.—Reader, San Diego.

There is nothing in the range of temperature which you mention that is unfavorable to the fig. It will readily stand a temperature lower than 28° in winter and is not affected unfavorably by high summer temperature, provided there is moisture enough to sustain the tree. The particulars which you would have to look into would be with reference to the occurrence of frosts early in the fall and late in the spring; but, from what we know of the situation which you mention, we would not apprehend that they would be troublesome. The fig is a hardy tree in California, and perhaps is grown at the present time over a wider range of territory than any other single fruit. In the case of the Smyrna variety caprification is necessary, as you already understand.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 22, 1901.

Alexander McAdie, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Dry northerly winds have continued during the week, and no rain has fallen. Grain is still in good condition in most places, but needing rain. There are some reports that wheat is turning yellow, and is heading out too rapidly. Green feed is becoming scarce in some places. The soil on the uplands has become too dry and crusted for cultivating. Work in hop fields is progressing. Haying has commenced. Pears and other fruits are dropping badly in some sections. Nearly all reports state that fruit was not so seriously damaged by frost as previously estimated, and a fair crop is expected. Large quantities of cherries are being shipped from Vacaville.

COAST AND BAY SECTIONS.

Northerly winds have continued during the week. Light rain has fallen on the northwest coast, and fogs have prevailed in some sections, benefiting growing crops. The soil is very dry, and grain is turning yellow at the base in some places. The early grain is in fair condition, but late sown grain and feed need rain very soon. Haying has commenced. Light frosts have occurred in some sections, but without damage. Deciduous fruits were considerably injured by the frosts two weeks ago, and in some sections it is reported that apricots will yield only half the usual crop. A fair crop of other fruits is expected.

SAN JOAQUIN VALLEY.

Clear weather, with cool nights and warm days, has prevailed during the past week. North winds have occurred daily in most portions of the valley, greatly drying the soil, which is now too hard and dry to work in the vineyards and orchards. Grain is badly in need of rain in all sections. Early sown grain is looking well considering the long dry period, but more rain will be necessary to make the heads fill out and mature. Late sown grain has been seriously damaged by lack of moisture. Haying is progressing, the yield and quality varying in different localities. Fruits of all kinds are reported in good condition, with prospects for good crop. Green feed is drying up rapidly. Stock of all kinds are healthy and in good condition.

SOUTHERN CALIFORNIA.

The weather has been partly cloudy during the week, with fogs along the coast, considerably benefiting grain and pasturage. Warm, dry weather in the interior has been favorable for haying, which has progressed rapidly; the hay crop is very heavy. Early sown grain is in fair condition, and in some sections will yield a good crop. Late sown wheat and barley are drying up, and will yield poor crops unless rain falls soon. At Anaheim apricots will be nearly a total failure. Peaches will yield about half the usual crop. Olive picking has commenced; the yield is larger than last season's. Oranges look well. Walnuts are in good condition.

Eureka Summary.—Grain and vegetables continue making good growth. A large acreage of peas will be planted. In some localities fruit is reported seriously damaged by frost; others escaped. A heavy yield is expected.

Los Angeles Summary.—Cloudy nights and foggy mornings beneficial to grain. Haying continues; good crop in places; not satisfactory in others. Bean land is in good condition and being prepared for planting by the 1st prox.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 24, 1901, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.10	44 59	47 95	40.16	38	56
Red Bluff	T	22.67	21.75	24 44	38	80
Sacramento	.00	17 50	17 32	18.68	42	80
San Francisco	T	18 99	18.10	21.31	46	65
Fresno	.00	10 38	7.94	8.25	42	82
Independence	.00	5 80	2 82	4 46	38	80
San Luis Obispo	.00	27.88	15 82	16.26	46	76
Los Angeles	.00	14 17	6.09	16 50	44	72
San Diego	.00	10.55	3.65	9.14	52	62
Yuma	.00	3.60	0 79	2.84	46	96

THE VINEYARD.

The Vagaries of the Lenoir.

To the Editor:—Viticulture is full of surprises. An article by Chauzit, a noted French viticulturist, in a recent number of the Revue de Viticulture, is of interest to California readers. It calls attention to the use made of the Lenoir in the Midi, one of the great wine growing districts of France. In that district, twenty years ago, the Lenoir was largely planted as a resistant stock. But it was found after the lapse of years that it was not a good investment for that purpose. Better, safer, more resistant and more profitable stocks were planted, the Lenoir fell into disfavor and was abandoned as a resistant stock.

At the present time, the article tells us, the situation is this: Great quantities of the Aramon, a heavy-bearing black grape, producing a rather light-colored wine, low in alcohol, are grown. Some color grape is needed to blend, to increase the color. The Bouschet hybrids, such as Petit Bouschet, Alicante Bouschet, and others are grown; but in that rich soil they produce wine that, though high in color, is low in alcohol. The wine made from the despised Lenoir, however, has plenty of color and is high in alcohol, says Chauzit, and is, therefore, desirable for blending with the Aramon. So it has been planted lately to a limited extent for that particular purpose.

And here comes the striking part of Chauzit's article, which should be pondered over by those who are planting the Lenoir on any and all soils in California, with the expectation of establishing profitable resistant vineyards on these roots. (There is a difference, the reader must always remember, between a "vineyard" and a "profitable vineyard." This distinction is sometimes lost sight of.) Chauzit recommends, in order to secure regular and profitable crops, to graft the Lenoir on resistant stock.

Local Experience.—At our own vineyard we have found the Lenoir to be a curious vine. We have never planted it on ground from which phylloxera-killed vines have been removed, but have planted it on virgin hillside soil, deep, mellow and rich. Until grafted, it made a vigorous growth, so much heavier than the growth of the Riparias alongside, that at one time, before either had been grafted, we almost regretted that we had not planted the whole ten acres in Lenoir, instead of Riparia. This was before we realized the merits of Rupestris St. George for our hillside soils. But when the two stocks were grafted, how different their behavior! Grafting the Riparia seemed to notably increase their vigor. The crop of Mondeuse on the Riparia stock, in spite of the dryness last year, was large and satisfactory—fine bunches and large berries—in addition to which the vines made a heavy, luxuriant growth. In pruning, we were enabled to leave a liberal supply of bearing surface for next year.

But on the Mondeuse grafted on the Lenoir, what a difference! The growth was poor, the Mondeuse wood was short and ragged, and the crop was small. There were possibly as many bunches, but they were coulured and weighed but little. In pruning these vines we did not dare to leave more than half the bearing surface that we did on the Mondeuse on Riparia stock sidelby side.

Up to the present time we have reason to believe that neither block is affected by phylloxera. When they do become affected, the Lenoir having less resistance, as everyone admits, we expect a much more marked difference. We do not expect to see the Lenoir die out entirely. By no means. If grapes continue for a term of years at $15 to $20 per ton, the vines on Lenoir stock will probably pay a small profit. But, with grapes at $10 per ton, the vines on Riparia will pay fairly well, while the vines on Lenoir would be cultivated at a loss.

What a Rich, Moist Soil May Do.—In my trips around the State, trying to learn something about resistant stock, I have seen one vineyard where the Lenoir seems to be a success. This is at Ewer & Atkinson's, in the Napa valley. In this particular spot the soil is deep, rich, black and moist—an ideal soil. Here, in spite of phylloxera, the Lenoir is remarkably thrifty and vigorous. Last year, while visiting the place, a curious fact was noticed. We went to look at some old Zinfandel vines that had survived the phylloxera for years. They were on their own roots, not on resistant stock. Here, on the side of a field, where thousands of vines had died out, were these vines, still surviving. They were fresh, green, vigorous and loaded with grapes. Surely, there could be no phylloxera on their roots. We got a shovel and looked. To our surprise, the roots were yellow with millions of the insects. Anywhere else the vines would have promptly died. But here, on this perfect spot of soil, they lived on and on, almost holding their own. If Lenoir is to be planted at all, it is on such soils, in which every condition is favorable. But such soils are rare, and, even in such a soil, it does not follow that some other stock, more vigorous and more resistant, will not prove more profitable. Mr. Ewer has begun planting Rupestris St. George. In the course of time it will be interesting to compare the crops produced on the two varieties.

In France, in spite of the fact that thousands of acres of vineyards planted on Lenoir stock have been uprooted, owing to their depressed vitality, rendering them unprofitable, there are a few spots where they have been fairly satisfactory. These spots are soils unfavorable to the phylloxera insect, soils so rich, moist and perfect that the old vinifera almost keep alive. But the Lenoir, on the whole, has proved a failure in France. The vineyards on Lenoir, owing to light production, and to the necessity of expensive treatments every three or four years with bisulphide of carbon, in order to check the ravages of phylloxera, have not been able to compete with the more productive vineyards grown on well-adapted, truly-resistant stocks, such as Riparia Gloire de Montpellier, Rupestris St. George, Rupestris Martin, Riparia x Rupestris 3309, and, for chalky soils, Berlandieri.

Advantage of Wide Knowledge.—It will be advisable for the intending planter of vineyard in California to acquaint himself with the history of resistant vines in other countries, where they have been tried in every soil and under the widest possible range of conditions. It would be a pity if we could learn nothing from the study of the history of the failures and successes of the millions of acres of resistants that have been planted in France, Spain and Italy.

While in California resistants have been in use to a very limited extent in a few localities almost as long as in Europe, the plantings have been desultory and, as a rule, made with little skill or determination, either in the selection of varieties or in the method of grafting. As a result, largely needless, many of the old resistant vineyards are failures, as regards returns on the money invested, and many have been dug out. Resistants were planted fifteen or twenty years ago in many parts of the State outside of Napa and Sonoma; but, almost without exception, they have been grafted in the field, with the result that vinifera roots have struck down, and the vines are no longer resistant. It is impossible to judge of the vigor of growth or of the adaptation of the resistant variety in such vineyards, where the vinifera roots predominate.

A great deal of money will doubtless be wasted during the next ten years in mistakes in planting resistants, in the choice of varieties of resistants and in methods of grafting. The variety and the method that will succeed on the Napa volcanic hills may fail on Contra Costa clays or heavy loams, or on Fresno soils where the water rises in summer to within a few feet of the surface. Common sense, careful observation, a study of what has been done in past years in Europe on a vast scale, as well as of what has been done in California on a very small scale—all this will not serve to prevent all mistakes, but will serve to prevent some mistakes. And mistakes often mean losses of thousands of dollars and years of time.

Frank T. Swett.

Preventives of Damage by Frost.

To the Editor:—In your last issue I noticed some remarks on this topic which need, as I think, more light and a slight correction. In regard to the one as to the Lodi men doing "a great deal of thinking" (which is very laudable, and ought to have been done long ago), allow me to say that late pruning was tried thoroughly near Vineyard station, Sonoma Co., eighteen or nineteen years ago, with the result that the vines bled almost to death and were thereby necessarily weakened; that the grapes, all Zinfandel, ripened much later, were very low in sugar, and the wine made from them was almost unsalable, as it was deficient in color and tannin and of a greenish taste—all of which is a natural and inevitable consequence to a thinking wine maker.

I have studied this matter closely, and my experience since then has led me to adopt a middle course, which I have found entirely successful, and which I herewith commend to our Lodi and other friends. It is to prune at the usual time, about midwinter, but instead of pruning (as was and is yet, I regret to say, the practice) to spurs of two buds, and corresponding short canes in such varieties as need longer pruning, to spurs of four buds and longer canes. Every vintner knows (and if he does not, the sooner he learns the better) that the upper buds on a spur or cane will start first and the lower buds will remain comparatively dormant. If the shoots from these are touched by frost, they should be immediately cut off close to the bud.

And here we come to the discovery of our friend at Napa, which he learned from a French vine dresser, that by pulling off the frosted shoots, he harvested a full crop of grapes from buds which started out from the wood. In this he is slightly mistaken. The buds do not start from the dormant wood, but kind Nature created the grapevine as one of the most recuperative plants in the universe by making each bud on well-developed grape wood a triple one, the main bud in the center, which starts first. But there are two reserve buds, one on each side of it, and, if the principal one is injured, they take its place. We had the same thing happen to our Chiles Valley vineyard in 1878, when the whole vineyard was frosted black, and my sons gave the whole crop up as lost; but by cutting off the frosted shoots close above the bud, we made a crop of three tons to the acre of the finest, cleanest grapes, high in sugar and flavor, which was a very fair crop for a four-year-old vineyard. It required a week of incessant labor for three men, but it paid well. If the frosted shoots are left on, however, the vitiated sap will create blood poisoning, as in the case of Eastern pear blight, and cause the disease we know as black knot, which, however, is also caused by too short pruning, and is nothing but stagnation of sap. I hope that these hints may be of use and cause more thinking.

George Husmann.

Napa, Cal.

THE FIELD.

Peanut Growing in California.

To the Editor:—As the frost last week destroyed my apricots, greatly injured the prunes and nipped the pears, my business is contracted down to a peanut basis. But I should like to know all about the raising of those same peanuts. I am told that this is the right season for planting. Any information through your columns or direction where to find such would be appreciated by your

Frost-bitten Subscriber.

The best account of peanut growing in California we have seen is the following, which was prepared for the Southern California Pomological Society by C. E. Utt of Tustin, Orange county:

For the profitable production of peanuts care should be taken to select suitable land. The soil best adapted to this crop is a deep, sandy loam or sediment—a soil that does not bake, is friable and easy to work. A heavy soil will retard the development of the nuts and prove undesirable in every way. Land that has been planted to alfalfa, though loose in character and otherwise desirable, is not conducive to the best development of this earth nut, unless farmed to other crops before planting to this crop. I have frequently noticed that the vines grown on land previously occupied by a stand of alfalfa do not do so well. The pods are large but ill-formed and invariably empty. This is the more remarkable from the fact that alfalfa is regarded as a renovator of worn-out lands. The soil should be retentive of moisture so as to insure a steady growth of the plants until fall. Land that will grow a moderate crop of corn without irrigation is moist enough. Drier lands can be used by irrigating during the growing season, say about the middle of July or a little earlier. Irrigation, however, adds to the cost of production and usually injures the quality of the nuts. In irrigating a growing crop one should be careful to keep the water well away from the vines, allowing it to subirrigate. If, by accident, the water should flood the vines, care should be taken to loosen the earth so as to admit the nut stems, else they will be barren. I do not think it advisable, in view of the present low price of nuts, to grow a crop on land requiring irrigation. If not enough rain falls during the winter the land may be irrigated before planting. To properly prepare the land for planting, plow deep during January or February and loosen with a cultivator or plow just before planting. The second cultivation or plowing should not be so deep as the first.

As to varieties, the only kind proving profitable with us, or so far as my observation goes in this State, is known as the "Virginia," which has become localized and known quite generally in the market as the "California" peanut.

Planting and Cultivation.—The planting season is from March 20th to the middle of May, the most of the planting being done in April. The largest yield I ever received came from a field planted in the latter part of March. I usually plant during the fore part of April, and am convinced that early planting is preferable. Some few growers, however, contend that planting should not be done before May. The seed should be shelled and one kernel dropped in a place. It may be soaked to hasten sprouting. If this is done, care should be taken not to soak too long, and then handled with care, as soaked seed is easily injured. Planting is generally done by attaching a shoe, similar to those used on corn planters, to a slide or to trucks and the seed dropped by hand through a funnel connected with the shoe. The planter does its own covering and the driver and dropper both ride. The seed is usually planted about 3 inches deep, in rows about 40 inches apart, and from 12 to 24 inches apart in the row.

If no rain falls after planting, I should not care if the crop was never cultivated provided the weeds could be kept down. Nevertheless, I usually cultivate about twice with a weed knife, leaving the ground as level as possible. I cannot advise deep cultivation, as I have seen fields of fine nuts ruined by it. Care should be taken to keep scrupulously free from weeds. If rain falls after planting, it is best to loosen the ground around the plants so as to enable the nut stems to enter the ground easily. It is not necessary to throw dirt over the plants; the stems will enter themselves if the soil is mellow.

The principal pests are gophers, squirrels, red spider and your neighbor's hens. The former should be poisoned. Neglect to do this often costs many dollars. The red spider, however, is the most for-

midable and dangerous pest. Many use sulphur, sprinkling a small amount on each vine subject to the pest. The result seems doubtful, some growers not being certain of receiving any benefit, while others are convinced that, if used in time, it keeps this pest in check. A few have used a cheap wash, claiming for it greater economy.

The harvest commences in the latter part of September and continues till the middle of November, the major portion being picked during October. The nuts are first dug by passing a steel knife, similar to a weed knife, drawn by two horses, just under the nuts, cutting the tap root of the vine. Men with forks follow and lift the vines out of the ground and drop them, nuts down, in winrows, throwing four or six rows together, but only one vine deep, so that they may dry rapidly.

PICKING.—After drying, the vines are thrown in piles and the picking begins. This is generally done by Mexicans and their families, the grower contracting with the boss to furnish hands and superintend at so much per sack of forty pounds. In picking care should be taken to see that all good nuts are taken from the vines, leaving those that are immature. See that the stems are all picked off so that they will present a marketable appearance. After picking, the nuts are placed (two or three sacks at a time) in a large cylinder churn or polisher made of lath or heavy wire screen, which is revolved until the nuts are sufficiently cleaned. After cleaning, it is best to pass them through a separator, where, by means of an air blast, the empty pods are thrown out, thus enhancing their market value. The nuts should be sent to market in new sacks holding about 120 pounds each.

COST OF THE CROP.—One serious drawback to peanut growing is the cost of harvesting, as the grower can do but little, comparatively, of the picking, and hence is called upon to hire it done. If some one would invent a peanut picker that would do the work cheaply and well, it would greatly lessen the cost of production. As to the cost of production, I put it at 3 cents per pound under favorable conditions. My own experience ranges from 2¼ to 4 cents, and I am persuaded that the present crop in this county has averaged a cost of 3 cents. The yield of nuts usually produced on an acre is about thirty sacks, or 1200 pounds. The best yield I ever knew was over sixty sacks, or 2400 pounds.

MARKETS.—Our markets are Los Angeles and San Francisco. The prices received range from 2½ to 5 cents per pound. The earliest harvest this year was sold at from 3½ to 4 cents, but the bulk of the crop is yet in growers' hands, with the buyers offering 3 cents. Usually prices advance considerably before another crop, and I have no doubt that next summer nuts will be worth considerably more than they are now. Our market is, and necessarily always will be, restricted this ceast. Any considerable export to foreign countries is prevented by the competition of nuts from the west coast of Africa and other tropical countres where land and labor are cheap. Shipments to the east of the Rockies is prohibited by the southern crop from Virginia, Tennessee, Georgia and the Carolinas. Indeed, they produce nuts so much cheaper than we that they can and actually do ship many carloads to this coast, paying a rail freight for 3000 miles, and "bear" our market.

In conclusion, if you are thinking of growing peanuts, don't rush into the business on a large scale. No one has yet retired with a fortune from growing this crop. Finally, if you do plant a few peanuts, don't expect too much, for while we sometimes sell for 5 cents nuts which cost 3 cents to produce, we also at times sell for 2 cents nuts which cost 4 cents to produce.

HORTICULTURE.

Frost Fighting Devices.

It is reported from San Jose that F. G. Deane of Morgan Hill has invented a frost-fighting apparatus which he claims will give good results. The instrument used consists of a plain basket of coarse wire, surrounded by a vessel containing water. In this basket a fire is built of coal or hard wood, and the baskets are placed at short intervals through the orchards. The pans of water serve the double purpose of creating steam and causing the heat to radiate, instead of going straight upward. The baskets are prepared and placed on short iron rods in the orchards beforehand. A thermometer, so arranged that when the mercury falls to 34° an electric bell will ring, gives the alarm, and at once the baskets are fired, oil being used to aid the combustion.

The Washington fruit growers are also on the trail of the frost serpent. In Yakima valley P. J. Flint and Rev. F. Walden have built movable fire sheds, to drag about the orchards with horses during nights when a severe freeze is expected. The fuel used will be wood and possibly damp straw, with the object of creating a dense smoke throughout the orchards. The plan is working successfully, and other orchardists are preparing to put it into operation. Yakima valley alone has 6000 acres in orchards, practically all of which is intended for commercial purposes. A year ago early peaches and apricots were severely damaged by frost, causing some growers to replant their orchards to winter apples and other hardy fruits. Some think the smoke scheme will obviate the necessity of making this expensive change.

This moving smoker is not new. George Dietzler of Butte Co., Cal., had them in use several years ago, as described at the time in our columns.

Against Hedges.

TO THE EDITOR:—In your last issue I see an inquiry as to the best time to prune cypress hedges and note your reply.

From considerable experience with hedges I should advise any one who is so unfortunate as to have cypress hedges to care for, and does not see his way clear to grub them out and plant something more desirable, to follow your advice, and then prune again between times. The Monterey cypress must be sheared often and carefully to keep it looking well, and even then it has the bad habit of dying out in spots.

A spark of fire dropped into an old cypress hedge will ignite the dry leaves and twigs of which the inside is filled and the only way to stop it is to cut a gap in the hedge ahead of the fire and be quick about it too. H. G. KEESLING.

Edenvale, April 21, 1901.

We are much of the same opinion after twenty-five years experience with cypress hedges, and yet when young they have charms for many eyes.

THE POULTRY YARD.

Notes for the Busy Season.

TO THE EDITOR:—These are busy days with many a poultry man in this State, for the best time of all the year for hatching chickens is rapidly passing. Two months, at the most, only remain in which to profitably raise chickens, either by incubator or by hen. A very large number of chicks are being hatched this spring; but all these will by no means be raised to maturity. There are many things done that prove fatal to the little ones that one sees afterward might have been avoided; but it is by these mistakes one gains knowledge that will profit him in the future.

BY THE ARTIFICIAL ROUTE.—It is certain that more attention is given to poultry raising this season than in previous years. It is equally true that more incubators are in use than formerly. They are getting to be more popular as the merits of the good machines are demonstrated. The increased use of the machines is demonstrated in one way by the large number of patterns advertised in poultry papers all over the country. Not a few farmers are using incubators, finding them far preferable to the old method of hatching by hens.

If the reader has no incubator, but intends getting one another season, be sure, in the first place, that a machine of approved merit is purchased. There is a great difference in incubators, and quite frequently the novice is dissatisfied with his purchase. There is little difficulty with a good machine.

Neither is there danger with a good brooder. But, evidently, there are many crude ones in use, for of late in different parts of the State brooders have caught fire and burned with their contents, often numbering hundreds of the innocents. These fires are the result in almost every case of badly constructed brooders, notably, faulty lamps. There need be no fear of fire if good lamps are used and kept in good condition. Disaster, always hard to bear, is nearly always the result of carelessness. A slipshod way of managing in the poultry business will surely be attended with loss.

FOR THE YOUNGSTERS.—It is surprising to see how much fine charcoal the little chicks will eat. Keep it, with fine grit, before them all the time. Charcoal, for young and old fowls, is a necessity. It is one of the best stomach correctives and will greatly add to the general health of any flock.

The smallest chickens are little cannibals and robbers, although they look to be the personification of innocence. To prove them robbers by nature, throw a few earth worms to a flock of twenty or more and note the commotion and strife. They will sometimes show their cannabalistic propensities and will so rapidly and deftly disembowel their nearest relatives as to astonish you. This is written of brooder chicks. Then they will sometimes pick each other's eyes and, if not watched, will soon blind their mates. The mutilated ones must be quickly removed and the flock divided. Give them larger quarters.

Next fall lay in a good supply of wheat chaff to use in the brooder and coops. Using a liberal supply of this, scatter therein finely-cracked grain, and keep the little ones at work from the time they are a day old. If this plan is used, there will be no complaint about leg weakness.

Always endeavor to prevent the chicks from crowding. Many of the finest chicks are thus smothered to death. A half dozen or more will be killed in this way in a very short time—only a few moments—if you are not on your guard. The poultry man who can always keep his chicks from crowding has conquered one of the greatest difficulties of the art of raising chickens—for art it is.

THE AGE LIMIT.—One of the most important questions connected with the production of eggs is: At what age do fowls become unprofitable? It is a question many have asked and but few have solved.

Readers of the PACIFIC RURAL PRESS are familiar with the experiments made along this line a year or two ago by the Agricultural Experiment Station of Utah, and the illustrations accompanying the detailed account of the experiment. The result was decidedly in favor of the pullets as against the old hens. The former were shown up in grand style by a large basket brim full of eggs; the latter by a much smaller basket, even full. (See PACIFIC RURAL PRESS, July 22, 1899.)

Now, the result of this experiment did not coincide with the opinions of many a poultry farmer who prided himself upon the laying qualities of his two and three-year-old hens. But the experiment confirmed others in their views in the matter. Not a few will ever be convinced as to the universal reliability of the experiment, because their own experience does not tally with that of the Utah people.

In 1898-99 the West Virginia Experiment Station tried their best to solve the knotty question. Seven months were devoted to the trial. White and Brown Leghorn pullets and two and three-year-old hens were used. The result is summed up as follows: "The three pens of pullets, calculated for 100 hens in each pen, laid during the experiment 6209 eggs, and the old fowls 6349 eggs."

TONICS.—The use of condition powers is strongly advocated by many, especially those who have these powders for sale. The powders are put in the mash in liberal quantity. To test the advisability of this method of feeding, the Hatch Experiment Station, connected with the Agricultural College of Massachusetts, conducted a series of experiments, in as fair a manner as possible, with the following result:

"In favor of the condition powder we have one experiment; against it we have two. It is not, however, my disposition to claim the powder injurious, but simply that it is not beneficial. This the four experiments, carried on with the utmost fairness, prove. In the light of these results, it is believed that poultry keepers throw away money expended for condition powders."

MEAT OR BONE.—At the same institution a series of experiments to test the comparative value of meat meal and cut bone for egg production were carried on. In the morning mash of one lot one part of animal meal to five parts total dry materials was used; in the mash of the other lot the same proportion of fresh-cut bone was used. In conclusion: "The advantage in this trial lies clearly with the animal meal as a food for egg production. It has given more eggs of greater average weight and at considerable less cost than the bone, and it is moreover, a convenient food to use, as well as cheaper."

A LAYING BOX.—The writer has for some time used a pattern of box for hens to lay in that has proved the very best he has ever constructed. It is so convenient, so satisfactory in every way, that he is sure all who put these boxes in their poultry houses will be well pleased. The advantages are that the box is readily cleaned, it affords the seclusion that the hen so well likes, and there is no chance for biddy to roost on it. The following is the description: The idea is to build the box against the side wall or against the end of the hen house. The nests are 12 inches square and 9 inches deep, with the back and sides nailed fast to the bottom, the front board being removable, so that the boxes may easily be cleaned. The cover of the box is of thin stuff, with a slant of 50°. The lid is 30 inches wide and strongly hinged and cleated. At the back of the nests there is a 4-inch walk, extending out from the box 1 foot, for the hens to fly up on. There is a 2-inch space at each side of the walk. The nest can be fastened up 2 feet from the floor for Leghorns. It does not take up any space on the floor whatever.

Napa, April 15. A. WARREN ROBINSON.

AGRICULTURAL SCIENCE.

University Summer School of Agriculture and Horticulture.

The University of California has just issued a 30-page pamphlet giving in detail information about the summer schools which will be open to students from June 27 to August 7 at the University in Berkeley. The offering includes condensed courses of instruction in nearly all branches of learning, and from this varied feast the attendant can select whatever he is fitted to assimilate. The charge is $10, for which the attendant can take just as much or as little as he likes. All interested should apply for the pamphlet to Mr. James Sutton, recorder of the faculties, Berkeley, Cal. It gives not only information of the studies offered, but practical suggestions as to cost of living at Berkeley during the session, etc. It is

desirable to take up the matter at once and make the necessary arrangements.

Readers of the PACIFIC RURAL PRESS may be supposed to be more particularly interested in the courses offered in agricultural subjects. President Wheeler has taken special satisfaction in the development of the summer school in agriculture, and in addition to the regular instructors of the University staff has secured the services of Prof. L. H. Bailey, the eminent horticulturist of Cornell University, whose books are so well known to our readers. Prof. Bailey will lecture and give laboratory demonstrations in nature study, which ought to attract teachers from all parts of the State.

THE AGRICULTURAL COURSES.—The main purpose of the courses in agriculture, horticulture and irrigation is to present connectedly the most important deductions from science and practice along the lines indicated by the titles. It is hoped that this will furnish much information of great interest and value in itself, and at the same time be suggestive of directions of more extended study and observation to be individually pursued by students according to their several inclinations and opportunities. In this way the courses are expected to interest practical farmers, and to assist them in attaining the modern point of view, as well as the latest facts and beliefs, policies and methods, so far as the limited time given to the subjects will allow. To general students of industries and commerce the courses will afford glances at the advanced agricultural arts and sciences of the day. Although the subjects are all inter-related, each will be treated, so far as possible, as complete in itself, and the student may elect one or more at pleasure.

1. Physics and Chemistry of Plants and their Application.—Professor Hilgard. Ten lectures.
2. Physics and Chemistry of Soils.—Assistant Professor Loughridge.
3. American Horticulture. — Professor Bailey. An exposition, from scientific and industrial points of view, of the principles involved, and a discussion of methods and materials employed. The aim will be to assist the student to broad views of the wonderful achievements of American horticultural arts during the last quarter of a century.
4. California Fruit Growing.—Professor Wickson. Local adaptations, policies and practices in the production of different fruits. Ten lectures.
5. Pacific Coast Irrigation Practice.—Professor Wickson. Policies and methods and conditions favoring their pursuance. Ten lectures.
6. Irrigation.—Professor Wilson. The distribution and division of streams in irrigation, measurement and duty of water. Ten lectures.
7. Special Lectures on Irrigation.—(a) "Legal Problems of Irrigation," Judge John D. Works of Los Angeles; (b) "The Work of the California Water and Forest Association," William Thomas, president of the association; (c) "The Distribution of Streams in Irrigation," two lectures by Hon. R. C. Gemmell, State Engineer of Utah; (d) "Pumping Water for Irrigation," Lewis A. Hicks. These lectures are to be delivered during the fifth and sixth weeks of the session, the exact dates to be announced.
8. Nature and Treatment of Plant Diseases.—Mr. Bioletti. Ten lectures.
9. Human Foods. — Assistant Professor Jaffa. Their composition and use and their adulterations. Ten lectures.
10. Feeding Farm Animals.—Assistant Professor Jaffa. Cattle and poultry foods and their rational use. Ten lectures.
11. Breeds and Breeding.—Mr. Anderson. Principles and practices to be observed in securing the best animals for various purposes. Ten lectures.
12. Milk and Its Products.—Mr. Anderson. A review of modern dairy science and methods. Ten lectures.

Though these agricultural courses are arranged to occupy the pupil most of the time during the day, if he desires to get as much agriculture as possible during his stay, the attending agriculturist may choose from other subjects also and take as little or much as he desires in his own line of work. The summer school will afford opportunity to those of mature years who desire to get some insight into the so-called scientific agricultural instruction of the day. It will also be helpful to young farmers who do not think they can afford to take regular instruction at the University. Newcomers to the State will also be edified, for nearly all discussions will be from a California point of view.

That Strong Paris Green for Apricots.

TO THE EDITOR:—In answer to your question as to injury by using Paris green too strong—that is, one pound to 100 gallons of water (PACIFIC RURAL PRESS, April 6th)—I would say that I can not find a single leaf injured on apricot trees, which is the kind of tree on which I used it. I have no doubt it would injure peach trees, but canker worms do not bother peach trees. I also think that cherry trees would not stand it quite as strong. All I can say is that there is no danger to apricot trees, even if used still stronger, but it is not necessary. The worms on our trees are nearly all dead. C. VOGEL.

Suisun, Cal.

The officers of the Nevada County Bank at Grass Valley are doing a very praiseworthy thing for their region. They wish to advance the local fruit interests. The first step they are taking is to determine whether or not there is enough fruit to warrant the establishment of a cannery. If it is determined that there is enough fruit, steps will be taken to interest outside capital in putting up the cannery, which need not be large nor expensive, but should be properly equipped in order to give satisfaction. They say the principal fruit will be Bartlett pears. They expect the cannery will not only establish a market for the fruit, but will encourage the planting of more trees. We mention this chiefly to emphasize the fact that they are going about the matter in the right way. Many people with good intentions undertake the cannery movement with a grand exhortation on general principles. For success the cannery needs much more than that. It must be known just what fruit will be available and in what quantities. Usually it is not enough to be sure of one kind of fruit because the cannery should have as long a season as possible. Again, there must be well grown fruit. It is not enough to know that much fruit goes to waste. It is often the case that owing to the lack of skill and attention with which it is grown it had better go to waste by the cheapest route. It is also not enough to know that there are many varieties of certain fruits—sometimes there are too many: all kinds of fruits in all kinds of conditions. This is not a good foundation for a cannery. There must be plenty of fruits of a few thoroughly acceptable canning varieties. For these reasons it is important to start in as our Grass Valley friends are doing. First find out what your locality can offer the canner and then be sure that there is enough to supply a cannery of sufficient size. These things cannot be profitably done on too small a scale.

California is in first at the horticultural end of the Pan-American Exposition. Both Mr. Wiggin and Mr. Filcher are in Buffalo setting up their permanent features of their displays and material is constantly going forward. It looks as though California would have no regrets in connection with her Pan-American enterprise.

FULLER'S EARTH, such as is found near Bakersfield, Cal., can be used for refining mineral oils. The ordinary way is to dry the earth thoroughly, then grind to 60-mesh and fill it into long cylinders through which the crude black oil is allowed to percolate very slowly. The oil that first comes out is clear as water and much thinner than that which follows. When the color of the exuding oil reaches a certain maximum shade the process is stopped, and the cylinder refilled with fresh earth, when the percolation is resumed.

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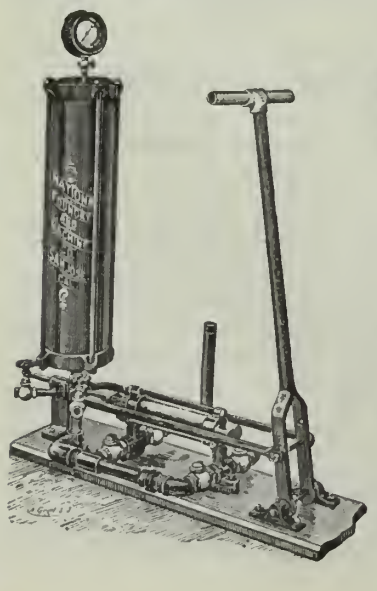

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Agricultural Review.

ALAMEDA.

HAYWARDS CANNERY WILL BE REBUILT.—Oakland Enquirer, April 19: Insurance adjusters are at work in Haywards rating up the loss on the Hunt cannery, which was recently burned to the ground. Orders have been given to rebuild the plant at once. As soon as the adjusters have finished, a large force of workmen will clear away the debris so that the new structures can be hurried along with as little delay as possible. It is hoped that a portion of this year's crop may be handled, and for that reason the work of rebuilding will be rushed. The loss has been scaled down by the adjusters so that it amounts to about $125,000, which is practically covered by insurance.

BUTTE.

BIG SHIPMENT OF MULES. — Biggs Notes: Mr. Biggs has shipped from here four carloads of mules within the last six weeks, finishing a big contract made by him with the United States Government. It is not authoritatively known just what price the animals were sold for, but it was, as near as can be learned, about $75 per head.

BIG PRICE FOR LAMBS.—Gridley Herald, April 20: H. A. Woodworth recently made a good sale of lambs to Wm. Tharp of Sutter City. He sold some twenty head of two-months-old bucks, receiving $10 per head for the same. Mr. Woodworth has a fine bunch of sheep and always gets the top notch prices.

STAGE LINE EQUIPPED WITH AUTOMOBILES.—Oroville Mercury: James Conley of the Oroville & Quincy stage line will be the first to introduce locomobile transportation upon a mountain stage route in this county. Mr. Conley and his partner have just ordered a machine of the most up-to-date pattern and expect to have it in operation as soon as the snow disappears from the summit. It will carry fourteen passengers and baggage. The new vehicle will take the place of the twenty horses now used to operate the line, which is 75 miles long and passes over the summit of the first range of the Sierras. The trip to Quincy, which now occupies twelve hours and requires hard driving, with several changes of team, will be made in seven hours. The fare by the new method of travel will be cheaper than by the old method, and fares will be reduced from the present price of $7 for the through trip to Quincy to $5. The machine will cost $3000 and will be of the most approved style. The company by which it is built will operate it two months and will give a positive guarantee that it will do business.

WILL TRY COTTON.—Gridley Herald: Some time ago we stated that we would like to see a crop of cotton raised on the adobe land west of town, and said the seed would be forthcoming if some of our farmers would agree to plant, cultivate and pick the crop. We have been informed by the party agreeing to furnish the seed that several of the farmers had agreed to try it and that the seed was expected this week. It comes from Merkle, Texas, where is grown some of the finest upland cotton in the South.

COLUSA.

THE LONE THISTLE. — Colusa Sun: The Board of Supervisors of Colusa county have passed an ordinance making it unlawful to permit thistles or "cockelberries" to grow in that county. Failure to eradicate these weeds is made punishable by fine of from $25 to $100, or imprisonment in the county jail not less than ten nor more than ninety days. The first thistle seen in Colusa county was in '51. In '52 there was a hedge patch, and now they are such a pest that the authorities are resorting to ordinances for their destruction.

CONTRA COSTA.

REDWOOD STAKES FOR GRAPE VINES.—Martinez Press: A number of vineyardists of this city have been clubbing together and purchasing redwood stakes for grape vines by the carload. They come from the Santa Cruz section, are about 6 feet in length and 3 to 4 inches in diameter. Vineyardist John Reid says they will remain standing from four to five years.

NEW SPECIES OF CANKER WORM.—Martinez Press: A new species of canker worm has appeared among the orchards in the vicinity of Martinez. It is about ½ inch long, greenish in color and is a lively traveler. It attacks the early fruit as it is forming and speedily creates havoc if not discovered and attended to. It is not thought to be destructive if attended to in time, as remedies are known which will be effectual removers of the new species of pest.

HOME OF THE ASPARAGUS.—Antioch Ledger, April 20: The asparagus season is at its height just now around Antioch and every night there are piles of boxes of this delicious vegetable on the wharf waiting for the boats to be shipped to San Francisco. The price to consumers in the city and elsewhere is 10 cents per pound, but the commission men are only paying from 75 cents for a fifty-pound box of third quality to $2.25 for the first. At this rate the commission men and retailers make more than the man who raises and cultivates the asparagus. This vicinity is noted for its fine asparagus and the vegetable finds ready sale wherever shipped.

KINGS.

COMPLAIN OF TOO MUCH RAIN.—Hanford Sentinel: Silas Simon, who has been on a trip through the '76 country, says there has been so much rain in that part of the valley this year that the grain crop will be very light. The Dinuba, Orosi and Reedley country, which has for several years been the dry granary of the valley, was so wet that it was impossible to plant the land to grain this year. There has been great expansion there in the planting of citrus fruits and raisin and wine vineyards.

NEVADA.

QUEER ACCIDENT TO A COLT.—Grass Valley Union and Herald: A colt belonging to Brown & Blamey broke a blood vessel in its head Monday morning by rearing and falling backwards. The colt was kept at the field of the firm at Watt Park. It is a very valuable animal, with the breed of a good trotter. The owners are confident of the recovery of the young trotter.

ORANGE.

WALNUT GROWERS' ASSOCIATION.—Santa Ana Blade: The Southern California Walnut Growers' Association has elected officers for the ensuing year as follows: W. H. Spurgeon, Santa Ana, president; T. L. Gouch, Rivera, vice-president; J. A. Montgomery, Rivera, secretary and treasurer. The committee entered into a contract for the furnishing of 75,000 bags for the crop of 1901. This association is composed of seven organizations, covering Los Angeles, Orange, Ventura and Santa Barbara counties. The executive committee is composed of six members of the board of directors from each organization.

RIVERSIDE.

HEMET FRUIT ASSOCIATION.—Hemet News: At the annual meeting of stockholders of the Hemet Deciduous Fruit Association the old board was re-elected, viz., J. A. Brown, P. N. Myers, J. H Botterell, A. Saunders, Charles McDiarmid. After the stockholders' meeting had adjourned the board of directors met, organized and re-elected the officers of last year as follows: J. A. Brown, president; P. N. Myers, vice-president; J. H. Botterell, secretary; Bank of Hemet, treasurer.

SANTA CLARA.

FRUIT PROSPECTS.—Campbell correspondence San Jose Mercury, April 20: The indications are now that the coming fruit crop will be very light throughout this section. From what we can learn there will be less than one-quarter of a crop of prunes and probably about the same ratio of peaches and apricots as the latter fruits were heavily damaged by frost except in a few favored localities. The orchards are in good thrifty condition and we may expect a fine quality of fruit and prices correspondingly high.

THE SALT INDUSTRY. — Palo Alto Times: The salt industry promises to assume much importance in this end of the bay. A company headed by Frank Smith, the borax king, and capitalized for $250,000, has purchased a large tract of marsh land on the east side of the bay, near Alviso, and will begin the production of salt on a large scale, with the most improved evaporating apparatus. A recent combine of salt producers caused an advance of $7 a ton in the price of salt, and this fact has stimulatod the present activity.

GREAT LAND DEAL.—Gilroy Advocate, April 20: The lands controlling the headwaters of Coyote creek have been purchased by a powerful syndicate known as the Headlight Investment Co. About 50,000 acres are involved in the deal. Several owners have already received the money for their lands. Engineers have been making examinations of the country. It is generally conceded that the waters of Coyote creek will be dammed and piped for irrigation and domestic purposes, probably to the cities on the bay. The principal dam will be located about 4 miles this side of the Gilroy hot springs, at a point where the stream flows through a valley offering natural advantages for a reservoir capable of impounding an enormous volume of water, having a storage capacity equivalent to 8000 H. P. A subsidiary dam will be placed at the intersection of Hunting Hollow and Coyote creeks, 2 miles farther east, to be used not only for supplementary storage purposes, but also as a protection to the main dam against extraordinary floods. It is estimated that the cost of this immense piece of work will amount to $1,500,000.

SANTA CRUZ.

RICE CULTURE TO BE TRIED.—Watsonville Register: An experiment in rice planting is being made in this valley. The experiments are being conducted by G. S. Cleveland and his son George, and their field of operations is sixty acres of slough land on the north side of Pinto lake, a portion of which has been prepared and planted to rice. The seed used is the red variety from Manila. During his sojourn as a soldier in the Philippines George Cleveland noticed that the natives of that country cultivated the red rice for food for themselves and as fodder for cattle. The grains are as large as oats, and when cooked the natives thrive upon it as a regular diet. As fodder it made a succulent food for cattle, and it is in the latter form that it will be cultivated on the Cleveland ranch. The rice grows like alfalfa. It has to be flooded at certain seasons and the crop is generally cut when it attains a growth of about 3 feet in height. After the first year it will grow continuously. It has been demonstrated that a quartor of an acre will provide feed for twenty head of stock. Aside from its value as stock feed, wild ducks are said to be exceedingly fond of this rice, and they have been known to travel many miles to obtain it.

COW IN A QUEER FIX.—Santa Cruz Surf: Frank and Kirk Gilbert ran across a cow in a curious position Monday while on their way up the coast on a fishing trip. Near the Baldwin dairy a cow made an attempt to leap the fence and landed on it so that her front feet were on the ground and her hind feet in the air. The cow was helpless and could not move from the position. The Gilberts notified men working in the field and the cow was extricated from this position by three men. It would have surely meant death to the animal if Messrs. Gilbert had not come along just in time.

SAN JOAQUIN.

GRAPES COMING NICELY.—Lodi Sentinel, April 20: The late frost did not do such a vast amount of damage as was at first thought. Grapes are reported as coming along well, and the average yield can be expected. Ferrara and Black Prince varieties were damaged the most and will not yield anything like an average crop. The other kinds seem to stand the frost much better, and the new shoots now showing are highly pleasing to vineyardists. The late-pruned vines are the prize winners this year, as they were not noticeably injured.

SHASTA.

HEAVY LOSS OF TIMBER. — Redding Free Press: Judge C. C. Bush, president of the Bank of Shasta County, has returned from a trout-fishing trip on the upper waters of the Sacramento river, and states that the destruction of forest timber by the storms of the severe winter almost surpasses belief. Everywhere are seen fallen pines and firs. Mighty trees containing thousands of feet of lumber are strewn about as if some giant hand had plucked them from the ground. In many places roads have been completely blocked by the fallen trees.

SONOMA.

TWO EGGS IN ONE.—Petaluma Argus: Wm. Dittman of Petaluma has a curiosity which is an egg within an egg. The outer shell is of immense size for a hen's egg. Dittman perforated the shell and attempted to blow the egg, intending to keep the shell on account of its large size. He blew and blew. Considerable egg meat was blown out, and then a rattle inside the shell caused an investigation. Inside the outer shell was a second shell, or an egg within an egg. The double egg will be kept as a curiosity.

RAIN AND BEET CULTURE.—Sonoma Index-Tribune, April 20: A large area of land has been planted to sugar beets on the Rose and Jones ranches, and, should the rain hold off much longer, it is feared that the crop will be a failure. Once the beets get a good start on the Sonoma marsh lands, they will require very little moisture and will take care of themselves with the usual cultivation. So far, however, the season has been very unfavorable since planting commenced, as very little rain has fallen. Favorable showers this month, however, may change the condition of things in the beet fields and enable the promoters of beet culture in this valley to reap the reward their enterprise deserves.

TEHAMA.

SALES OF SPRING WOOL.—Red Bluff News: About 1200 bags of wool have been sold in Red Bluff during the past week, which is one-half the spring's clip. About 600 bags were secured by Major Kimball and C. H. Greene. Prices ranged from 12 to 14 cents, and the latter was paid to Money Hickman for thirty-four bags which was a particularly fine clip.

PEACHES NOT ALL KILLED.—Chico Record: W. H. Kemp, a fruit grower, residing on Pine creek, just over the Butte county line, in Tehama county, exhibited at this office a branch taken from one of the peach trees in his orchard, which is loaded with large, well-developed fruit, showing no effect of the late frosts. Mr. Kemp has thirty acres in fruit and no varieties were damaged and he will have a full crop. At Vina, however, only a few miles above, the fruit is badly injured.

EXPERIMENTING WITH BEETS.—Corning Observer: Beet planting on the Finnell place has been completed. The seed which was first planted has sprouted and the tiny tops of the saccharine-producing plant are now appearing above the ground.

INCREASE OF SHEEP.—Observer: Albert Chittenden is determined that none of the sheep owners of this county will be ahead of him when it comes to a matter of increase in his flock. A couple of weeks ago it was reported that the rate of increase in Mr. Chittenden's band of sheep was 112%. It was later learned that S. Wilcox's flock of sheep had tied that mark. Since then, however, a number of young twin lambs have been added to Mr. Chittenden's flock, and the increase has been raised to 115%.

YOLO.

HEAVY SETTING OF APRICOTS.—Winters Express: J. B. Bowman brought in a twig from one of his Royal apricot trees, the twig being loaded with twenty-one apricots, about half grown. It was less than a foot long, and there was not a place on it where more fruit could be put. The frost did no injury at all on his place, and he is thinning his fruit to give it a chance.

GLANDERS IS SAID TO BE SPREADING.—Sacramento Record-Union: Dr. C. H. Blemer, recently returned from Woodland, Yolo county, where he called on the Board of Supervisors and suggested that they appoint a County Veterinarian, to examine horses supposed to be afflicted with glanders. The Board took prompt action by appointing Dr. Alexander to the position. Dr. Blemer says that during the last year fourteen or fifteen glandered horses have been killed in Yolo county. The disease, he says, appears to be spreading, hence his suggestion to the supervisors.

YUBA.

THERE WILL BE GRAPES.—Marysville Democrat, April 19: When frost first came to some of the vineyards it was thought there would be very few, if any, grapes this season. The prospect is not now, however, quite so gloomy. In one locality, where the vineyards are less than one-half mile apart, one is badly scorched while the other was not injured.

Horse Owners! Use

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.*

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A prominent Montreal clergyman, the Rev. James H. Dixon, Rector St. Judes and Hon. Canon of Christ Church Cathedral, writes:—"Permit me to send you a few lines to strongly recommend PERRY DAVIS' PAIN-KILLER. I have used it with satisfaction for thirty-five years. It is a preparation which deserves full public confidence."

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THE HOME CIRCLE.

The Mother-in-Law.

She was my dream's fulfillment and my joy,
This lovely woman whom you call your wife.
You sported at your play an idle boy
When I first felt the stirring of her life
Within my startled being. I was thrilled
With such intensity of love it filled
The very universe! But words are vain;
No man can comprehend that wild, sweet pain.

You smiled in childhood's slumber while I felt
The agonies of labor. And the nights
I weeping o'er the little sufferer knelt.
You, wandering on through dreamland's fairy lights,
Threw out your lengthening limbs and slept and grew,
While I, awake, saved this dear wife for you.

She was my heart's idol and my pride;
I taught her all those graces which you praise;
I dreamed of coming years when at my side
She should lend luster to my fading days,
Should cling to me as she to you clings now—
The young fruit hanging to the withered bough.
But, lo! the blossom was so fair a sight
You plucked it from me for your own delight.

Well, you are worthy of her, oh, thank God!
And yet I do not think you realize
How burning were the sands o'er which I trod
To bear and rear this woman you so prize.
It was no easy thing to see her go—
Even into the arms of the one she worshipped so.

How strong, how vast, how awful, seems the power
Of this new love which fills a maiden's heart
For one who never bore a single hour
Of pain for her! Which tears her life apart
From all its moorings, and controls her more
Than all the ties the years have held before;
Which crowns a stranger with a kingly grace,
And gives the one who bore her—second place.

She loves me still; and yet were Death to say:
"Choose now between them," you would be her choice.
God meant it to be so—it is His way.
But can you wonder if, while I rejoice
In her content, this thought hurts like a knife,
"No longer necessary to her life!"

My pleasure in her joy is bitter sweet;
Your very goodness sometimes hurts my heart,
Because for her life's drama seems complete
Without the mother's oft-repeated part.
Be patient with me! She was mine so long
Who now is yours. One must indeed be strong
To meet the loss without the least regret,
And so forgive me if my eyes are wet.

—Ella Wheeler Wilcox.

The Stage Driver's Story.

"That? Oh, that's old Squire Hone's place; at least, 'twas his once, and a mighty fine place it is, too," said "Capt. Bob," the stage driver.

I was the only passenger, and as the day was fine I was sharing his seat for a better view of the country. We were just then passing a large old-fashioned mansion standing well back from the road and surrounded with magnificent elms and maples.

"Yes, it's a mighty nice old place," repeated the driver, "and it just does me good to see them youngsters frolicking on that grass plot. Hullo! there's the old squire himself!" and he pointed with his whip handle to a shaggy-bearded old man who with the help of a crutch was hobbling down the steps. "Seems pretty badly broken up. And he used to be one o' the halest, heartiest men in Stantonville. I know I used to looked up at him when I was a boy and think that the giants I'd read about couldn't have been much bigger. But the trouble with him was his inside make-up didn't fit the outside. It always seems to me when I see some o' them great gianty-lookin' men as if the Lord meant 'em to have hearts as big in perportion as their bodies, but they don't always; or if they were big once, they've got so badly shriveled up, some of them, that I should think they'd wabble 'round like a dried kernel in a walnut shell.

"My Uncle Ben used to go to school with the squire when he was a youngster, and he says he was so mean that he wouldn't so much as give a fellow an apple core without makin' him pay back in chewin' gum, and when you see a boy so stingy as that you can most gen'ly tell about what sort of a man he is goin' to make. But he was an only son, and I s'pose that helped to spoil him. He had one sister, and when her husband died, leavin' her with two children and scarcely money enough to pay his funeral expenses, she begged her brother to let her come back to the old home; but she might as well have asked that big rock yonder to take pity on her. And 'twasn't long before the poor lady, not being used to hardships, broke down and died. Folks thought then that maybe he'd be shamed into doin' something for the two orphans, seein' they were his own nephews; and he was; he took 'em both out o' school and 'prenticed 'em to a shoemaker. Generous, wasn't he? And he had but one child of his own, too, and she was a girl that would have been glad enough to have 'em for brothers. Her own mother was dead—as nice a woman as you'd care to meet; one o' your real ladies, with always a smile and a heartsome word for everybody; a good prayin' woman, too. Folks that knew her intimate use' to say that she was always prayin' for the squire, and that sometimes she'd send a note asking to have him prayed for in meetin'. She didn't give his name, but everybody knew who it was. But prayin' for a man like Squire Hone always seems to me a waste o' breath. Anyway, the poor lady died without seein' any good come of it, and 'twasn't more'n a year 'fore he was married again. The second wife was a good deal like himself, big and handsome, with no more heart than an oyster, and Annie, who was one o' them soft-eyed little things that always look as if they wanted a lot o' mother-in', got to pinin', so that at last some of her mother's relatives over in Waterbury sent for and kep' her till she was grown up. I remember as well as if 'twas yesterday the day she came back; I'd just begun drivin' the stage, and she was one o' my first passengers, a tall, slim-built girl, with a forehead like a baby's, and a look in her eyes that made you feel as if you wouldn't say a swear word before her no more'n you'd cut off your hand; and that's the kind o' girl that I like to have 'round when that off horse begins to get balky. Hi, there, Jerry! None of your nonsense!"

"The squire'd been sort o' ailin' that spring," said Capt. Bob, when at last the balker was conquered, "and when Annie heard of it she hurried home to see if she couldn't cheer him up. And he was mighty well pleased to have her there, for he and madam didn't get on any too well together; and no matter how mean a man is, he likes havin' somebody to coddle him all the same, 'specially when he's sick. But when he found out that she was gettin' letters from a young feller in Waterbury, and was expectin' some time or other to marry him, he was madder'n a March hare, and swore that if she didn't give him up he'd cut her off without a penny. But Annie didn't take that part of it much to heart, for the young man was purty well to do, and as he wasn't through college they didn't feel in any hurry about marryin'. But as soon as he was ready to start out for himself he went right to her father, for he was a real straightforward sort of a feller, and told him he'd come as ask for Annie. For answer the squire ordered him to go about his business and wait till he was sent for. But at that Annie braced up and said that she had given her promise to marry him as soon as he was through college, and seein' she was of age she thought it wouldn't be right for her to break her word.

"'Oh, marry him! Marry him!' stormed the old squire, hard as a flint, 'but I warn you not a cent will you get from me if you have to go to the poorhouse.' And Annie, feelin' that she wasn't beholden to her father in any way, seein' he'd let her live away from him so long, went back to Waterbury the next day and she was married at her aunt's.

"'Long about that time there was a craze in this part o' the country for investin' in minin' stock, and the squire, though gen'ly a pretty shrewd business man, went into it hot and heavy. Fact, he was so greedy about it he seemed to begrudge anyone else havin' a chance. But all of a sudden the mine caved in, so to speak, and the squire had a stroke of paralysis that come mighty near making an end of him. And when they come to look into his affairs they found that his house and pretty much everything else that he owned had been mortgaged to raise money for the minin' stock.

"In the meantime his daughter had moved somewhere away out West, and there wasn't a soul to give the old miser a helpin' hand. But he'd had the sense to leave a few hundred dollars in the bank, and when the folks that held the mortgages shut down on him, his doctor took a room for him in a cheap lodgin' house and had him moved into it. Seemed quite a come-down, but nobody pitied him very much.

"Well, to make a long story short, in the course of a year or two the county was voted a new poorhouse, and the Hone property being for sale the committee concluded it'd be cheaper to buy that than to build. You see, there was about twenty acres of land and not a neighbor within quarter of a mile. The squire had another stroke when he heard what they were goin' to do with it, and his landlord, findin' that by the time the doctor's bill was paid he wouldn't have a dollar left, turned him over to the town. I dare say the selectmen were sorry to do it, but of course they had to treat him the same as the rest o' the town poor; and when he came to himself there he was in his old home under an overseer, and herded with paupers."

II.

Two years later I chanced to be passing over the same road with Capt. Bob Moreley for driver.

"Say!" he cried, facing about as we came in sight of the Hone place, "member my tellin' you 'bout the old squire? Well, sir, there's been great doin's up there, and they say the old man's so changed that his own wife wouldn't know him. Seems his daughter 'long 'bout that time lost her husband, and when some of her friends wrote her what the old gentleman had come to she packed right up and hurried on East with her little girl and took a house down in the edge o' the village so's to be near him. Tell you what, the way some women in this world forgive helps a fellow to understand the forgivin'ness of the Lord.

"But she hadn't more'n got here when she was taken down with rheumatic fever, and not bein' able to go herself, she sent her little girl over to ask about the squire. The old man was sittin' on one o' the benches there by the gateway, with his chin on his cane, when the little one came in, and he started as if he'd seen a ghost. They say she's the born image of her mother when she was her age, and she's named after her, too, and when her grandad called her Annie she run right to him and clumb on his knee and begun chatterin' as if she'd known him all his life. He's gen'ly rough as a bear with children, but they say he broke down and cried like a baby.

"Well, that little midget kep' comin' right along, bringin' flowers and jells and lovin' messages from her mother; and 'bout the first question she'd ask him would be: 'Have you said your prayers this mornin', grandpa?' And then she'd make him recite with her 'Our Father.' And before folks knew what was goin' on the old squire was converted. You know the Bible says: 'A little child shall lead 'em,' and it seems as if the Lord must have sent that little one there on purpose to bring him to repentance; at least, that's the way it looks to me. His daughter, soon as she was able to be up, wanted him to come live with her, but he was afraid he'd be a trouble and thought he'd better stay where he was. To be sure, he said, 'twas the poorhouse, but 'twas in the poorhouse that he'd found the way to Heaven."

At this point the off horse began to balk, and it was several minutes before the captain could go on.

"Queer," he remarked, as he settled back in his seat, "what ups and downs sometimes come to people. All of a sudden, one day, 'bout a year ago, the squire had a letter sayin' that a new vein had been struck in the mine that he'd invested in, and that the stock had doubled in value. Seems he'd been smart enough to hold on to the paper, so he was once more a rich man; and the first thing he did was to deed twenty acres of land to the county and buy back his home. Then he had the house put in order from top to bottom, and to-day his daughter Annie and her little girl are livin' there with him, and the two nephews that he 'prenticed to a shoemaker are bein' fitted for college. Curious, wasn't it, how it happened? Makes you think of old Nebuchadnezzer havin' to go down on his marrow-bones, and then gettin' back his throne after he'd learned his lessons. Anyhow, the squire's clothed in his right mind at last, and I've come to the conclusion that his wife's prayers weren't wasted, after all."—New York Independent.

Bustle in the Sick-Room.

There are certain persons who ought to be by legal or some other enactment barred out of a sick-room. They come at the most inopportune moment, bustle in with a sort of hurrah, taking it for granted that their presence will be cheering and beneficial to the patient. They are breezy and bright, but unspeakable, trying and exasperating. They have somewhere or other heard that one must always be cheerful under such circumstances, and, following out this idea, they are noisy to boisterousness, and frequently absolutely maddening to the sufferer as well as to the attendants. Most of these people are destitute of the commodity known as nerves. Never having suffered any very serious ailment in their lives, they are incapable of appreciating the tortures endured by sensitive organizations.—Health.

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Strange Facts.

A railway engine is equal in stength to 900 horses.

Seven species of wasps secrete and store up honey just as do the bees.

The weight of the air which encircles the earth is equal to that of 581,000 cubes of copper, each 1093 yards square.

If the world be divided into land and water hemispheres, London is the center of the land, New Zealand of the water.

European astronomers are now busy photographing the sky. There will be about 32,000 plates, giving the location of 30,000,000 stars.

The water boundaries of France are as follows: Mediterranean sea coast, 395 miles; North sea, Straits of Dover and English channel, 572 miles; Atlantic ocean, 584 miles.

On one of the Indian reservations in New York State is a toy factory which employs several hundred Indians all the year around. The toys manufactured here are being shipped all over the world.

The Egyptian reed, which was used for making the pens found in Egyptian tombs, is of a hard variety, growing to about the diameter of an ordinary goose quill. Pens made from it are said to last for a day or two and do excellent work.

The London Lancet calls attention to the fact that in England canned tomatoes are now being extensively colored, in order to make them attractive and as if made from ripe fruit. Among the colors so employed are coal-tar colors and cochineal. The subject of artificial coloring and preservation of food is now receiving great attention in England.

Light travels from Jupiter's satellites at the same rate as it does from our gas lamps. A few years ago, says a London newspaper, a star suddenly came into sight, burst into first order brightness, and then, in five or six weeks, died out of sight. Difference of opinion existed between spectroscopists like Huggins and Lockyer, as to what it meant, but there was a general agreement that what we saw was something that happened in the time of Elizabeth, only that the light had taken 300 years to reach us. It was the "latest news," in fact, from that part of the heavens. The rate of transmission no one questioned.

Little Money, but Rich.

A writer in the Outlook describes a ride he once took with an old farmer in a New England village, during which some of the men of the neighborhood came under criticism.

Speaking of a prominent man in the village, I said: "He is a man of means?"

"Well sir," the farmer replied "he hasn't got much money, but he's mighty rich."

"He has a great deal of land, then?" I asked.

"No, sir; he hasn't got much land, either, but he is mighty rich."

The old farmer, with a pleasant smile, observed my puzzled look for a moment, and then explained:

"You see he hasn't got much money, and hasn't got much land, but still he is rich, because he never went to bed owing any man a cent in all his life. He lives as he wants to live, and pays as he goes; doesn't owe anything and isn't afraid of anybody; he tells every man the truth, and does his duty by his family, his neighbors and himself; his word is as good as his bond, and every man, woman and child looks up to him and respects him. No, sir; he hasn't got much land, but is a mighty rich man, because he's got all he wants."

JOHNNY—I was next to the head of my class to-day.

Father—"Good! How did it happen?"

Johnny—"We was standing in a circle."—Trained Motherhood.

The Ideal Sleeping Room.

The ideal sleeping room will face the east. It will not be less than fifteen feet square, with windows on two sides for light and ventilation. For ventilation it will have an open fireplace. The walls will be hard finished, and tinted a color that will be restful to the eyes. The woodwork will be finished in its natural color, paint not being admitted. The floor will be of hard polished wood, with small rugs for comfort that are to be shaken weekly. Everything that would invite dust will be strictly excluded, therefore the furniture will have no extra carvings. The one hair mattress will be of the best quality, made in two parts for convenience in turning and airing with a woven wire spring beneath. The bed clothing will be the lightest at the same time the warmest, consisting of blankets and a white spread. All extra adornments and fancy things of no use will not find a place here. The curtains will be of thin washable material. The "coming woman" will plan to have her bed set away from the wall for health's sake as well as convenience. Modern "conveniences" will be let alone as far as stationary washbasin with hot and cold water is concerned, the portable washstand being used instead, she preferring to do a little extra work to running any risk of being slowly and genteelly poisoned. Her bed will be well spread open the first thing in the morning, and the sunshine and air invited to do their part towards airing and cleansing the same, while the making of the bed will be the last of the morning duties.—Hull News.

Semi-Centennial Anniversary of Bloomers.

It was just fifty years ago this month that Mrs. Bloomer had her picture taken in the short skirt and Turkish trousers which have rendered her immortal. At that time she was publishing a dress reform journal called the Lily, in one number of which the picture appeared as a frontispiece. The magazine contained a number of articles by prominent physicians indorsing the new style of dress as more sensible and hygienic than the long and trailing skirts then worn. What Mrs. Bloomer was not able to accomplish the bicycle brought about, and she at least had the satisfaction of seeing her name become generally adopted as a title for the costume which she invented and advocated. There is now a movement on foot among the admirers and followers of Mrs. Bloomer abroad, principally in Germany and England, to celebrate the semi-centennial of the "bloomer" in some fitting manner. One of the suggestions is that money be raised for a bronze statue of the inventor attired in her original costume.—Chicago Tribune.

For Burns and Scalds.

The following liniment has been in use for a length of time, in the practice of St. Thomas' Hospital, in cases of burns or scalds—the parts are smeared over with a feather dipped in it: Take three ounces of olive oil, four ounces of lime water; mix them for use. In all probability, it might be more advisable to use cold water by means of linen cloths dipped in it, or either of the following, as long as the parts are occupied by heat and inflammation, viz: Take two ounces of rectified spirit, half a pint of lime water, or take one drachm solution of acetate of lead, three drachms spirit of camphor, one pint of distilled water. The follow- is also a good application, used cold, where the skin is not broken, in burns or scalds, keeping the parts constantly moistened with it by means of fine linen cloths: Take six ounces lime water, three ounces of proof spirit. Equal parts of lime water and milk are also used to allay the heat and inflammation consequent upon burns and scalds; and to alleviate the pain and procure rest, as well as in those cases where the nervous system has received a severe shock, opiates in sufficient doses may be given. The after treatment will depend much on the circumstances of the case itself.—Health.

MR. PEET, a rather diffident man, was unable to prevent himself from being introduced, one evening, to a fascinating young lady, who, misunderstanding his name, constantly addressed him as Mr. Peters, much to the gentleman's distress. Finally, summoning courage, he bashfully but earnestly remonstrated:

"Oh, don't call me Peters; call me Peet!"

"Ah, but I don't know you well enough, Mr. Peters," said the young lady, blushing, as she playfully withdrew behind her fan.—Exchange.

DOMESTIC ECONOMY.

How to Kill, Dress and Cook a Belgian.

This treatise does not profess to represent the most approved method necessarily, nor does it aim to give all cooking recipes; it is simply a statement of our method, adopted because it is of little trouble. The hare is killed instantly by a blow on the head. At first we bled the animal, but learning it was not done in England, where hares have been used for years, we have abandoned that.

Have ready a sharp pocket-knife, a clean hatchet and a clean board. Slit skin from vent to throat, and from paws to this median slit. Remove skin, taking care that the carcass lies on the clean board while doing it. With hatchet chop off head, leaving a good part of neck with carcass and feet. Open body cavity by median slit from vent to neck, cutting through ribs close to sternum. Remove the heart, lungs, liver and all viscera. Save the liver after carefully cutting away the gall bladder. Place the carcass on clean board and cut it up with hatchet and knife as follows: One cut at knee joint, one half way between knee and hip and one at hip joint. Cut off the thin flanks, keeping them or not as you see fit; the rump makes one piece Then, after breaking ribs with hatchet, cut saddle and back into four pieces; the neck makes a piece by itself, and a very delicate morsel. The fore limb can be cut at elbow and at shoulder. This gives you eighteen pieces, which are thrown into a pan as cut, with the liver washed, drained and allowed to stand for two or three days. This will make a delicious stew or fricassee, and is excellent if curried, supposing you and your friends are fond of curry. The liver can be served on a platter with the rest or minced and used in gravy. If you wish to make a particularly fine dish, and it is in the fall of the year, get a few mushrooms from the fields (you should, of course, know how to tell the edible species) or buy a can of French mushrooms and serve them with the minced liver when the rest of the hare is served.

Do not fry or broil a hare more than four months old. And do not repeat the mistake of a hospitable housekeeper in Eugene, who, at Christmas time, served roast hare whole to some guests who had never before seen hare on the table. Roast hare is delicious, but its shape is not attactive to tyros. There are, probably, over forty different recipes for cooking the hare; we have only referred to the simplest and easiest method.

It is evident from the above that a full grown hare will make a meal for from four to six people.

If you wish to save the pelt, you will, after cutting up the hare on the clean board and putting the meat away, tack the the skin on some flat surface, where it will dry, sprinkling the inside while it is still fresh with salt and a little powdered alum.

The hare is best skinned immediately after killing while the body is lax. Before removing the hide, it is a good plan to press on the abdomen just in advance of vent, to empty the bladder. This renders it impossible for it to defile the meat when you are cleaning it. —E. L. Wasburn.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 24, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price heing per bushol:

	May.	July.
Wednesday	71 @70¾	70¾@71½
Thursday	71⅝@70¾	71¾@70¾
Friday	70½@70⅞	70⅞@71⅜
Saturday	70⅝@71	70⅞@71½
Monday	71½@72⅝	71⅞@72⅞
Tuesday	72¼@71¼	72¾@71⅞

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	5s 9¼d	5s 9¾d
Thursday	5s 9½d	5s 9¾d
Friday	5s 9 d	5s 9⅛d
Saturday	5s 8⅞d	5s 9½d
Monday	5s 10 d	5s 10¼d
Tuesday	5s 10 d	5s 10¼d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 02 @1 02½	1 06⅞@1 06½
Friday	1 01½@——	1 06 @1 05¾
Saturday	1 01 @——	1 06 @1 06⅜
Monday	1 01 @1 01½	1 06⅝@1 06½
Tuesday	1 01¾@1 02½	1 07 @1 06½
Wednesday	1 02¼@1 02½	1 07¼@1 07¾

WHEAT.

This cereal has heen tending against buyers in the local market most of the time since last review, owing to the unfavorahle weather conditions in this State for coming crop. There was little actual business, however, in spot wheat, Eastern and foreign markets inclining, as a rule, against the selling interest. Exporters were unahle to operate to advantage, with foreign markets devoid of strength and the local market firm. While the tendency of values here was upward, the huying of actual wheat was of such insignificant proportions that little opportunity was given to estahlish prices on a materially higher plane than had been ruling. Ocean freight rates moved downward more than prices for wheat moved in the opposite direction. An iron ship was chartered for wheat to Europe at £1 12s 6d per ton, being a decline of 2s 6d from rate previously reported, and ahout ten shillings, or $2.40, per ton under the extreme figures of the season. That ocean freight rates will go still lower is altogether prohahle, and it looks as if wheat in this center must hring hetter prices in the near future, almost regardless of conditions which may exist ahroad. The United States vislhle supply east of the Rockies is reported at 49,868,000 bushels, showing a decrease of 2,005,000 bushels for the past week.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s4½d@6s5d	6s2d@6s2½d
Freight rates	40@——s	32½@35s
Local market	$0 96¼@1 00	$1 00@1 02½

The prices ahove are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.01@1.02½.

December, 1901, delivery, $1.05¾@1.07¾.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at $1.02½@1.02½; December, 1901, $1.07½@1.07¾.

California Milling	$1 05 @1 07½
Cal. No. 1 shipping, alongside	1 01¼@1 02½
Oregon Valley	1 02½@——
Washington Blue Stem	1 02½@1 07½
Washington Club	1 00 @1 05
Off qualities wheat	97½@1 01¼

FLOUR.

Values remain quotahly in same position as last noted. While there is nothing to warrant anticipating any very pronounced changos soon, fluctuations are more apt to he to firmer than to easior figures. Spot supplies are not heavy of any description, and especially are desirahle export grades for the time heing in quite limited supply.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy hrands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

This cereal has been having an unsettled market, proving more sensitive to weather conditions than the harometer. With clouds in sight, buyers were timid and sellers anxious, hut with the sky clear, there were no hargains presented in the barley market, at least as viewed from the standpoint of huyers. Owing to the absence of rain and tho great need of it in most localities, holders of harley wore in many instances unwilling to let go at prevailing prices or at utmost figures warranted as a quotation. Values for hrewing grades have not heen lately as well maintained, relatively, as for feed descriptions. The market has been in the main firm since last review, and prospects are that it will soon be still less favorahle to buyers.

Feed, No. 1 to choice	82½@ 85
Feed, fair to good	80 @ 82½
Brewing, No. 1 to choice	85 @ 87½
Chevalier, No. 1 to choice	——@——
Chevalier, No. 2	——@——
Chevalier, poor	——@——

OATS.

The advanced figures last quoted have heen well sustained, not so much on account of very active inquiry as of very meager supplies. Choice to select qualities are especially in scanty stock. There is every prohability that the market will continue in favor of sellers for at least several months to come.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 35 @1 42½
White, poor to fair	1 25 @1 32½
Gray, common to choice	1 30 @1 42½
Milling	1 42½@1 50
Surprise, good to choice	1 45 @1 52½
Black Russian	1 12½@1 30
Red	1 30 @1 45

CORN.

Comparatively high prices are ruling for this cereal, with spot stocks of small volume and in few hands. Thero is not much offering to arrive and there is an entire absence of undue selling pressure.

Large White, good to choice	1 17½@1 22½
Large Yellow	1 20 @1 25
Small Yellow	1 55 @——
Eastern, in bulk (carload lots)	1 20 @——

RYE.

Inquiry for this cereal continues slow, and in the matter of quotahle rates there is no change for the hetter observahle.

Good to choice, new	80 @ 82½

BUCKWHEAT.

Nothing doing, market being practically bare of offerings from first hands. Quotations remain nominally as last noted.

Good to choice	1 85 @2 00

BEANS.

The very stiff tone last noted in the hean market continues to prevail for nearly all descriptions. The light spot supplies and the rather gloomy crop outlook, especially in the lower coast section, causo holders of white heans to be very slow ahout selling, even at the comparatively high prices estahlished. Limas are being offerod still more sparingly, and hid fair to be soon wholly out of stock in this center. Pinks continue to be ohtainahle at comparatively easy ratcs, but of other colored beans there are no heavy supplies. In point of quantity offering, Bayos aro second on the list in tho line of colored sorts, while Red Kidney are as difficult to secure in noteworthy quantity as choico white heans or Limas.

Pea, fair to good, 100 lbs	—— @——
Small White, good to choice	4 75 @5 00
Lady Washington	4 00 @4 15
Butter	4 25 @4 50
Pinks	1 70 @1 90
Bayos, good to choice	2 50 @2 75
Reds	3 00 @3 25
Red Kidncy	4 50 @4 75
Limas, good to choice	6 25 @6 50
Black-eye Beans	2 75 @3 00
Horse Beans	1 25 @1 75
Garhanzos, large	2 00 @2 25
Garhanzos, small	1 25 @1 75

DRIED PEAS.

Market is quiet at quotably unchanged rates, offerings and demand heing hoth of insignificant volume.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

Inquiry is good for choice Northern wools, light in weight and bright in color, market for same heing firm at current quotations, and in occasional instances for exceptlonally fine lots, slightly higher figures are realized than are quotahle in a regular way. Heavy and defective are not receiving any special attention from buyers, but these wools are almost invariahly neglected in the early part of the season.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

The hop market ls quiet, and is likely to so remain for some time, as stocks have heen worked down to very small proportions, and there will he nothing of consequence to operate upon until next crop puts in an appearance. Values for last year's hops are necessarily largely nominal at this date. For new to arrive, the range on contracts, so far as reported, is 10@12c.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

No special changes havo occurred in quotable rates in the hay market. Choice to select is not heing crowded to sale heyond the requirements of the trade, and in some cases transfers are made slightly above quotations. Hay is now being cut in somo localities, hut that there will be any inquiry worth mentioning for new hay for some weeks to come is not likely.

Wheat	8 00@13 00
Wheat and Oat	8 00@11 50
Oat	7 00@11 00
Barley	6 00@ 9 50
Volunteer	4 50@ 7 00
Alfalfa	7 00@ 9 00
Stock	4 50@ 7 00
Compressed	8 00@12 50
Straw, ₱ hale	40@ 47½

MILLSTUFFS.

Bran was in only moderate supply and was rather firmly held, with demand fair. Business in other mill offal was light at generally unchanged values. Prices for Rolled Barley were unsettlcd and against buyers, in sympathy with the market for the whole grain. Decidedly stiff values wero current for Milled Corn.

Bran, ₱ ton	16 50@17 00
Middlings	17 50@19 00
Shorts, Oregon	16 50@17 50
Barley, Rolled	17 50@18 00
Cornmeal	26 50@ ——
Cracked Corn	27 00@27 50

SEEDS.

No new features have been manifested in this market since last review. Business is of insignificant proportions. Quotations are based mainly on asking figures and remain practically as last noted.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Grain Bags have heen offering at concessions from the figures lately current, and at the easier rates are meeting with very little inquiry. Unless the crop of wheat and harley proves much larger than present indications warrant expecting, a weak market for bags is likely to he experionced. Wool Sacks are without quotable change, hut the demand on account of the spring clip has been about satisfied.

Calcutta Grain Bags, huyer June-July	6¾@ 6⅞
Calcutta Grain Bags, spot	6½@ 6⅝
San Francisco Grain Bags, 22x36, spot	6½@—
State Prison Bags in lots of 2000, ₱ 100	5 65 @—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

A slightly hetter tone is reported in tho Eastern markets for Hides and Pelts, but there has heen no appreciable improvemont in conditions here. Tallow ls in good demand at current rates, mainly for export.

Only select hides, clean and trimmed, can be relied on to hring full figures. Culls of all kinds, oither from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lowcr quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	8½	7
Light Steers, under 48 lbs	8	6½
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	6½
Wet Salted Kip	9	7
Wet Salted Veal	9	7
Wet Salted Calf	9½@10	8½@ 9
Dry Hides	15½@—	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	70	@ 90
Pelts, medium, ₱ skin	50	@ 65
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3	@ 3¼
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Rseipts of now crop thus far have heen very light. Dealers are looking for liheral arrivals in the near futuro, and are anticipating easler prices than have heen lately nominally current in a wholesale way. For months past the business ln this article has been of the veriest johbing character, loaving wholesale values very poorly defincd.

Extracted, White Liquid	5 @ 6
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
White Comb, 1 lb frames	11 @12
Amber Comb	8 @10
Dark Comb	6 @ 7

BEESWAX.

While large quantitles could prohably not he placed at full current quotations, there is no evidence of purchases heing made at any lower range of values.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Beef is selling at slightly easier figures, hut there is nothing to warrant anticipating materially lower prices for some time to come, although offerings are on the increase. Voal is not arriving freely and is selling to very fair advantage. Values for Mutton and Lamb have not changed materially during the week, but market was rather easy in tone, the quantity offering heing fairly liberal, as compared with the requirements. Hogs have heen arriving a little more freely, mainly from milk ranches, and prices have been shaded slightly in favor of consumers, but are still too high for packers.

Beef, first quality, dressed, net ₱ lb	7½@ 7¾
Beef, second quality	7¼@ 7½
Beef, third quality	6½@ 7
Mutton—ewes, 7½@—c; wethers	7½@ 8½
Hogs, hard grain fed, medium	6½@ 6⅝
Hogs, small, fat	6½@ 6⅝
Hogs, large, hard	6½@—
Hogs, feeders	—@—
Hogs, country dressed	8 @—
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	9 @ 9½

POULTRY.

Arrivals of California poultry wero mainly common old and small young chickens, for which the market was slow and weak. Eastern poultry was in fair receipt and operated against the advantageous sale of ordinary domestic. Fryers and young Roosters in fine condition were in light supply and in good request, hringing good prices. Turkeys continued in poor demand. Ducks and Geese hrought fairly steady values. Pigeons were slightly lower, hut did not lack for custom at the figures quoted.

Turkeys, live hens, ₱ lb	12 @ 13
Turkeys, live gobblers, ₱ lb	9 @ 10
Hens, California, ₱ dozen	4 00 @5 00
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	7 00 @8 00
Fryers	5 50 @6 50
Broilers, large	4 00 @5 00
Broilers, small	2 00 @2 50
Ducks, old, ₱ dozen	5 00 @6 00
Ducks, young, ₱ dozen	6 00 @7 00
Geese, ₱ pair	1 50 @1 75
Goslings, ₱ pair	2 25 @2 50
Pigeons, old, ₱ dozen	1 75 @2 00
Pigeons, young	2 00 @2 50

BUTTER.

The market is lacking in firmness. A few favorite brands go to special trade at a moderate advance on highest figures warranted as a quotation, but thero is more huttor offering than can he placed at full ratcs quotod. Most of the surplus is going into cold storago or is heing packed.

Creamery, extras, ₱ lb	17 @17½
Creamery, firsts	16 @16½
Creamery, seconds	— @—
Dairy, select	16 @16½
Dairy, firsts	15½@—
Dairy, seconds	— @—
Dairy, soft and weedy	— @—
Mixed store	12 @12½
Creamery in tubs	17 @—
Pickled Roll	17 @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

There are fairly liheral offerings of domestic flats, and more than immediate custom can he found for at full current figures. Young Americas continue in light supply, but demand for them at the prices lately realized is not brisk.

California, fancy flat, new	10 @—
California, good to choice	9½@—
California, fair to good	9 @—
California Cheddar	— @—
California, "Young Americas"	9½@10½

EGGS.

While quotable values have continued at about same range as preceding week, and while some extra choice have sold above quotations, the market has not been firm. There were accumulations of the ordinary run of offerings, and to have effected a speedy clean-up of this stock, decided concessions to buyers would have been necessary.

California, select, large, white and fresh.	16	@17
California, select, irregular color & size.	15	@15½
California, good to choice store	14	@14½
Eastern, as to section and grading	—	@—

VEGETABLES.

Asparagus, Peas and Rhubarb were in liberal receipt. Canners are now running on Asparagus and Peas, paying 1¼c. per pound for the latter in wholesale quantity. There were few Tomatoes on market and these mainly Mexican. Onions were in light supply, but at the comparatively high figures prevailing not many were required to satisfy the demand.

Asparagus, ℔ box	75	@1 75
Beans, String, ℔ lb	10	@ 12½
Cabbage, choice garden, ℔ 100 lbs	50	@ 65
Cauliflower, ℔ dozen	50	@ —
Cucumbers, ℔ doz	50	@ 65
Egg Plant, ℔ lb	——	@——
Garlic, ℔ lb	8	@ 10
Onions, Yellow Danver, ℔ cental	3 50	@4 00
Onions, Australian, ℔ cental	3 50	@4 00
Onions, New Cal. Red, ℔ cental	2 00	@2 50
Peas, Sweet garden, ℔ lb	1½	@ 2
Peas, good to choice, ℔ sack	75	@1 25
Peppers, Green Chile, ℔ lb	——	@——
Rhubarb, ℔ box	40	@ 75
Rhubarb, Mammoth, ℔ box	1 00	@1 25
Squash Summer, ℔ box	——	@——
Squash and Pumpkin, ℔ ton	——	@——
Tomatoes, ℔ box	1 50	@2 00

POTATOES.

While old potatoes are not in heavy stock, the inquiry for them is on the decrease, as new are beginning to arrive in wholesale quantity, and are receiving the preference of many consumers. Only the best old stock is specially inquired for, common and defective moving very slowly, even at low figures. New potatoes sold at a slightly lower range of prices than preceding week. Demand for seed potatoes is about over.

POTATOES.

Burbanks, River, ℔ cental	50	@ 80
Burbanks, Petaluma-Tomales, ℔ ctl.	65	@1 00
Burbanks, Oregon, ℔ cental	90	@1 25
Early Rose	65	@ 90
Garnet Chile, ℔ cental	90	@1 00
Peerless, ℔ cental	75	@ 90
New Potatoes, ℔ cental	1 00	@1 75
Sweet Potatoes, Yellow, ℔ cental	50	@ 65

The Fruit Market.

FRESH FRUITS.

Cherries have been arriving rather freely the past week, but a considerable proportion of the offerings were not sufficiently ripe to be salable to advantage. Strictly choice to select brought, as a rule, very good figures. Values for Strawberries kept close to the range of previous week, with very good demand for best qualities. Apples were offered out of cold storage at about same prices last quoted, but did not meet with much custom.

Apples, fancy, 4-tier box	1 75	@ 2 25
Apples, good to choice, ℔ 50-lb box	1 00	@ 1 50
Apples, common to fair, ℔ 50-lb box	——	@ ——
Cherries, Black, ℔ box	1 50	@ 2 00
Cherries, White, ℔ box	75	@ 1 25
Strawberries, Longworth, ℔ chest	6 00	@ 9 00
Strawberries, Large, ℔ chest	4 00	@ 7 00

DRIED FRUITS.

The prominent feature of the market for cured and evaporated fruits the past week has been the active movement in evaporated apples, mainly on local and coast account, causing a decidedly firmer tone for this variety, with holders in most instances asking stiffer figures than were current at date of last review. Apricots continue to be quite firmly held, owing to the prospective light crop, but stocks now remaining are light and mostly in the hands of jobbers. The higher figures demanded for last year's Apricots will consequently not bring in any great amount of wealth, and whatever benefit may accrue on this account will go almost wholly to dealers and not to growers. The Prune movement has continued tolerably brisk from the Association warehouses at the 2c. rate for the four sizes, but at the same time has not come up to the expectations of the directory, nor has enough coin been realized on account of the cut to justify the scheme being called a complete success. The 15 days specified for the time of the cut rates being in force expire to-day, and about 500 carloads are reported having been sold at the reduced figures. At this writing it is not known what the pleasure of the Association will be as to prices of prunes from this time forward, but the 2c. rate will likely be continued, many growers favoring the same; others advocate restoring rates to a 3c. basis, especially as the crop prospect at this date is far from brilliant. In other dried fruits the trade of the past week has been insignificant, with market showing no special strength, but values remain quotably in same position as at date of last review. Shipments of dried fruit for the week include 42,000 lbs. to Australia and 20,300 lbs. to British Columbia.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	5½	@ 6
Apricots, Royal, choice, in sacks, ℔ lb	6	@ 6½
Apricots, Royal, fancy	7	@ 8
Apricots, Moorpark	9	@10
Apples, in 50-lb boxes, rings, pressed, fancy	4½	@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	3	@ 4
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5½	@ 6
Peaches, unpeeled, choice	4	@ 4½
Peaches, peeled, in boxes	11	@14
Pears, unpeeled Bartletts, halved, fancy	5	@ 6
Pears, halved, unpeeled Bartletts	3	@ 4
Pears, quartered, unpeeled Bartletts	3	@ 4
Plums, Black, pitted	4	@ 5
Plums, White and Red	5	@ 6
Prunes, Silver	4½	@ 6

COMMON SUN-DRIED.

Apricots	3½	@ 4½
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	1½	@ 2½
Figs, White	2½	@ 3½
Peaches, unpeeled	3	@ 5
Pears, prime halves	2	@ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: Four sizes, 2c. per lb.; 40-50s, 3¾c.; 50-60s, 3¼c.; 60-70s, 2¾c.; 70-80s, 2¼c.; 80-90s, 1¾c.; 90-100s, 1¼c.

RAISINS.

The recent brisk movement in 3-crown loose Muscatels at the special rate of 3c. to seeders and 5c. to jobbers, has absorbed all the stock the Association intended to dispose of at this cut price for advertising purposes, and rates have been slightly advanced. In other raisins there is a moderate movement reported, values for the same as officially quoted remaining unchanged.

F. O. B. FRESNO DELIVERY.—CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb	——	@ 7
Loose Muscatel, 3-crown	——	@ 6½
Loose Muscatel, 2-crown standard	——	@ 6
Loose Muscatel, seedless	——	@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Seeded Raisins, 1-lb packages, ℔ lb	5¼	@—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9¼c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Oranges were in more liberal receipt, and prices in both the auction and open market showed a lower range. Only best qualties met with positive inquiry or brought forth any noteworthy competition from buyers. Lemon market continued easy in tone, especially for other than most select, stocks being more than sufficient for immediate demand. Limes were in ample supply and market was fully as favorable to buyers as last noted.

Oranges—Navel, ℔ box	1 25	@2 25
Seedlings, ℔ box	75	@1 25
Tangerines, ℔ box	——	@——
Grape Fruit, ℔ box	1 00	@1 50
Lemons—California, select, ℔ box	1 75	@2 00
California, good to choice	1 25	@1 50
California, common to fair	50	@1 00
Limes—Mexican, ℔ box	4 50	@5 00
California, small box	——	@——

NUTS.

While market for Almonds presents a decidedly firm tone, there is very little trading at present. Walnuts are practically out of stock. Peanuts are not offering in heavy quantity and values are being well sustained.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@13
California Almonds, soft shell	10	@11
California Almonds, hard shell	6	@ 7
Peanuts, California, fair to prime	4½	@ 5½
Peanuts, Eastern, hand-picked	5½	@ 6
Pine Nuts	5	@ 6

WINE.

The wine market presents a very strong tone, but there is scarcely anything doing at present in a wholesale way, stocks being almost wholly out of first hands. The present range of values for dry wines of the vintage of 1900 may be said to be 22@25c per gallon. Sales can certainly be effected at these figures, and in exceptional instances slightly higher prices might be realized, but not in a way to warrant making the latter rates a basis for quotations.

California Dried Fruit at New York.

NEW YORK, April 24.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Market rather quiet. Aside from Prunes, there are no large offerings.

Prunes, 3¼@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	147,400	5,286,512	5,238,784
Wheat, centals	200,282	6,861,785	5,648,762
Barley, centals	44,157	3,334 982	4,636,625
Oats, centals	1,655	585,430	687,809
Corn, centals	2,335	94,234	119,136
Rye, centals	890	110,482	92,762
Beans, sacks	889	531,572	346,353
Potatoes, sacks	20,503	1,356,534	1,075,208
Onions, sacks	169	156,401	140,411
Hay, tons	3,078	138,833	133,504
Wool, bales	3,174	35,810	45,493
Hops, bales	...	8,180	9,702

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	158,484	3,067,826	3,565,142
Wheat, centals	231,925	6,589,029	5,017,660
Barley, centals	...	1,917,371	3,659,373
Oats, centals	350	48,433	41,515
Corn, centals	...	3,172	17,203
Beans, sacks	44	12,744	23,645
Hay, bales	110	85,660	117,512
Wool, pounds	...	641,031	4,324,433
Hops, pounds	3,529	539,519	999,734
Honey, cases	...	1,758	3,438
Potatoes, pack's	258	128,331	67,425

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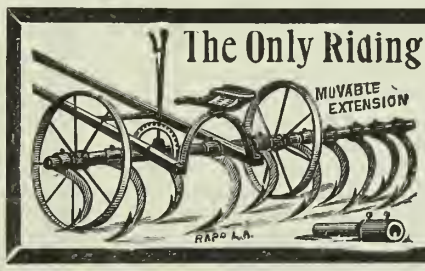

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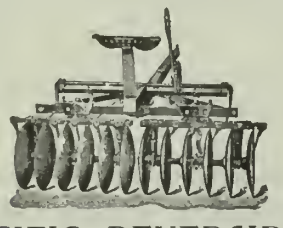

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Answers by Dr. Creely.

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TO THE EDITOR:—I have a heifer with a swollen tongue, the throat also swollen or lumpy. The tongue is swollen very badly, hangs out of the mouth two or three inches, and slobbers all the time. It has been so about two months, gradually getting worse. She is very thin and can hardly eat. Will Dr. Creely tell me what is the trouble?—WILL STROTHER, Salida, Cal.

Call in the nearest qualified veterinarian and use the following prescription: Chlorate potash, 6 ozs.; oxide iron, 3 ozs.; borax, 2 ozs.; alum, 1 oz.; molasses, enough to mix; tablespoon three times daily. DR. E. J. CREELY.
510 Golden Gate Ave., S. F.

The New Game Law.

Governor Gage has signed Assembly bill No. 625, the work of the Assembly Committee on Fish and Game. California is now under the protection of this bill, and all county legislation, such as the local 25-bird-bag limit, 15-day quail season, is repealed.

In brief, the changes effected are:

Shortening of the general open season on ducks to three months following Nov. 1st.

Establishment of a 50-bird-bag limit on ducks and doves, and a 25-bird limit on other game, except quails, on which the limit is twenty.

Stoppage of night shooting, i. e., shooting after half an hour after sunset, or sooner than half an hour before sunrise.

Stoppage of the sale of quail, partridge, grouse, sage hen, ibis, plover or deer meat, whether killed in or out of the State.

Restrictions on common carriers, such as prohibiting their receiving from one person during one day more than the legal number of birds allowed by the bag limit, and requiring them to label the same with the name and residence of the hunter shipping same.

Stringent regulations against trapping any of the birds mentioned in the bill.

Establishment of the office of State Game Commissioner, to have the power to appoint deputies, both commissioner and deputies to hold office at the pleasure of the Governor and serve without compensation. These deputy fish and game commissioners will have the powers and authorities of sheriffs to make arrests for violations of the fish and game laws of the State.

The establishment of a gun license of $1, payable to the Game Commissioner, who must execute bond of $5000 for faithful performance of the obligation thus resting on him. Licenses to run from July 1st to June 30th of the succeeding year. Hunters must carry this license and be able to display it to any fish and game protective officer; moneys accrued from the sale of these go into the State treasury under a game commission fund. This is applicable to the protection of game birds, restoration and importation of them, and to the expense necessary to the prosecution of offenders. Minors and untaxed Indians are not affected by this law.

A season limit of three deer per man is also made by this bill.

Counties can make these laws more stringent, but they cannot make them less so. Present legislation will have to be repassed by the county supervisors in order to become effective as before the bill.

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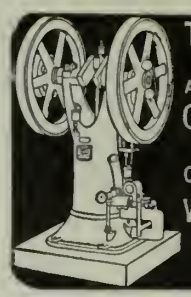

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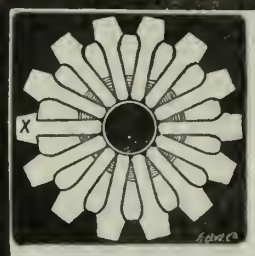

The Studebaker HUB.

The foundation of the wheel is the HUB. Our hubs, which are made from specially selected timber, are each scientifically treated with the **Studebaker Filler** before the spokes are driven, rendering them absolutely impervious to moisture, and making a safe guarantee against checking or loose tires in any climate. Over 50,000 sold in 1900 and more than **One Million in Daily Use** the world over, testifies to the superior points of construction in the **Studebaker Wagon.** Ask your dealer for **The Twentieth Century Studebaker.** Insist upon it. If not there write us direct, and we will tell you where you can get it and why it is the **Cheapest Wagon for you to use.**

STUDEBAKER BROS. MFG. CO.,
South Bend, Ind., U. S. A.

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"Pasteur Vaccine"

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Nearly 2,000,000 successfully treated in U. S. and Canada during the last 5 years. Cheap, safe and easy to use. Pamphlet with full particulars, official endorsements and testimonials sent FREE on application.

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The De Laval Cream Separators have ever been the best of separators. They were the original and have led in every stage of development. The "Alpha" disc invention is restricted by patents to the De Laval machines only. The 20TH CENTURY improvements give them still greater capacity and efficiency. They are as much superior to the best of other separators as such machines are to setting methods.

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can bale 22 tons of hay in 10 hours or NO PAY.

Circulars Free.

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Page Stock Fence much to fell a tree across it. We will stand the damage for the first ten men who try it. Who'll duplicate this "ad?"

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in your neighborhood need wells for home supply or live stock purposes? Just take the time to count them, then figure up the money you could make in drilling those wells.

Star Drilling Machines will do the work better, more of it and last longer than any other machines of the kind made. Send for our free illustrated catalog, price list, etc. Here is a chance to get into business for yourself.

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without expense or attention, giving a constant supply of water. **RIFE Hydraulic Engine** pumps water any height. Sold on 30 days trial. Send for catalogue.

RIFE ENGINE COMPANY,

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"Greenbank" Pure 100% Caustic Potash and 98% Powd. Caustic Soda.

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Sole Agents, - No. 123 California Street, SAN FRANCISCO, CAL.

THE DAIRY.

Feeding Skim Milk to Calves.

The Nebraska Experiment Station has just issued Bulletin No. 68, which treats of the subject of raising calves. This experiment is an attempt to show the profit of raising beef calves on separator milk, as compared with that derived from allowing them to suck their dams. Western grade Hereford and Shorthorn cows were selected, the aim being to secure individuals uniform in respect to date of calving, type, and milking tendency.

The cows were divided into two lots, lot 1 being taken from their calves, while lot 2 were allowed to run with them. The animals in both lots were weighed once a week, and all rations carefully measured and recorded.

The calves fed by hand made good gains during the first five months, but not equal to the lot running with the cows. When the two lots were put on feed after the test, there was not much difference in the condition or form, but the sucking calves were smoother and better fleshed.

After weaning, the hand-fed calves had the advantage, being accustomed to rations of dry forage and grain. At the end of the year there was practically no difference either in appearance or weight between the two lots.

To find the difference in the cost of raising the two lots, all food was charged to both cows and calves at market price. In this test it was found that a skim-milk calf could be raised to six months old at a cost of about $9 for all food consumed. Labor was not taken into consideration, owing to the difficulty in finding a fair basis.

The cows used in the experiment were more inclined toward beef than milk production, but still they averaged 3992 pounds of milk and 158 pounds of butter fat during the milking period. This amount of butter fat would make 184 pounds of butter, which would be the amount charged to each sucking calf.

As to the quality of the two lots, at the age of fourteen months it was quite impossible to detect any difference between the sucking and skim-milk calves.

Judge Snowball's Ideas of Cows.

Judge J. W. Snowball of Yolo county has engaged in a discussion with an Eastern breeder as to the comparative desirability of special and dual purpose cows. From the writing in Hoard's Dairyman we omit the direct issues and take what seems to be a straight tip on what Judge Snowball considers the best cows from the point of view which he describes:

I do not feed my cows any grain of any kind; they simply have alfalfa pasture and alfalfa hay, and my cows cost me for all their feed less than 4 cents a day the year round. Yet I estimate, to be on the safe side, that all their feed, pasture and hay, and labor for milking, at $2 a month for each cow, costs for each cow $25 per year, and for this outlay for two tons of hay per cow per year, interest on value of land, labor, etc., keeping up the farm, this $25 is full compensation. I receive in return $4 per month for ten months in the year for each cow's milk, and a calf every year, sold on or before a year old for $20; total, $60, or a net profit per cow of $35. I consider this a good investment on a $50 cow for one year.

I have no sentiment about cattle. Everything I do is with the aim of paying interest on the investment, and my conclusions are that there is no breed of cattle equal to the Shorthorn and their grades, when bred on milk lines, for profit to the average farmer; for this is a two-purpose cow—good for milk and early maturity, and easy to put in order for beef.

I will admit that there are localities and places, such as dairy farms near large cities, where milk and cream are sold to consumers, where raising of the calves would not be profitable, in which case the special dairy cow would be preferred; while on large ranges of cheap lands the white-faces, or doddies or some other half-breed would be desirable. But the class I am speaking for is that large number—the average farmer—the man who supports this country, feeds the people, raises the foodstuffs, the bread, the butter, the cheese, the beef, the fruit, and everything we live upon—the man that is the least esteemed in the world, but the most useful of all mankind.

The calves I sold for $20 at six to ten months' old cost nothing to raise. For three or four months they made their own living in my pastures. My two-year-old steers I sold for $40 cost nothing to raise, as they were these same skim-milk calves, and were never in a barn or feed lot after they were four months old, but lived upon the pastures, the straw, the roughage of the farm.

Practical experience has told me that for the average farmer the cow who can turn rough feed into butter fat, and her offspring yield beef at an early age—the dual-purpose cow—is the most profitable for the average American farmer, and I do not need two years in a school of agriculture to learn this fact. It may be well in this connection to say that where I live we have no snow in winter and but little frost. Cattle live outdoors all winter. After May in each year we have no rain to injure our feed, until our winter rains set in in December. We feed—or I feed—my milk cattle all the good alfalfa hay they can eat for four months in the year—December, January, February and March; after that they will not eat much hay. Our pastures are good, with all the green feed they can eat; although the cattle have hay put before them, while being milked in stanchions, every day in the year, they do not eat an average of over five pounds of hay a day for the year, or less than 2 cents for barn feed a day.

My alfalfa yields three crops a year, of about four tons per acre, in three cuttings, at a cost of less than $4 per ton, put in the barn.

That it's a **SHARPLES Cream Separator** guarantees superiority, to those who know, and others should write for catalogue No. 131

Very valuable treatise on "Business Dairying" free for the asking.

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are the Standard; they are guaranteed to pump more water with the same power than any other pump, any quantity, any height.

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South Dakota Adds Another Stone to the United States Triumphal Arch

A separator contest was held at Oneota Hall, Aberdeen, S. D., March 18, 1901, to determine the comparative merits of the United States, Sharples and DeLaval Separators. Mr. A. W. Burnham, a prominent and well-known citizen, was appointed by the farmers and separator men present to act as "Dairy Expert" and take charge of the contest and give official results of the same. As will be seen by the report given below,

The Improved United States Separator

Again Proved Its Superiority over all others and

Was Awarded First Place

Make of Separator	Selling Price	Rated Capacity	Capacity During Test
United States No. 6,	$100.00	350-400	408
Alpha Baby No. 2,	125.00	450	448
Sharples Tubular No. 6	175.00	650	628

THE U. S. AHEAD.

A. W. BURNHAM, Dairy Expert.

WITNESSES { S. A. STEARNS, J. M. HURST, D. G. VAUGHAN, JOHN GAULY, C. N. GAMBLE, F. H. LEACH. GEO. W. MANTOR, C. A. MCARTHUR,

The United States run over its highest advertised capacity and skimmed the cleanest while the others run under their advertised capacity.

Notice how much larger capacity the U. S. gives for the money, in addition to its cleaner skimming, than the others. To have equalled the United States it would have been necessary for

The DeLaval to have skimmed at the rate of 610 lbs. instead of 448 lbs.
The Sharples " " " " " " 714 " " " 650 "

All of which goes to prove the correctness of our claim that when utility and price are considered the

IMPROVED U. S. CREAM SEPARATOR IS THE MOST PROFITABLE TO BUY

WRITE FOR CIRCULARS

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

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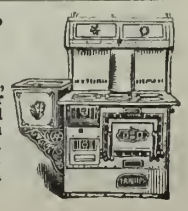
$50.00 RANGE FOR $25.00

TO INTRODUCE THE

WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.



Patrons of Husbandry.

Tulare Grange.

To THE EDITOR:—The regular semi-monthly meeting of Tulare Grange was held at its hall in Tulare on Saturday, the 20th inst.

The first and second degrees were conferred on a class of two by the Worth Master, F. P. Styles.

The report of the State Grange Committee on Woman's Work, as published in the PACIFIC RURAL PRESS of April 20th, was discussed, and it was resolved that the third Saturday in May and every fourth regular meeting thereafter shall be conducted by the Sisters, and "Woman's Work in the Grange" shall be the special subject for consideration that day.

A communication from Selma Grange was read, expressing their readiness to hold a joint picnic with Tulare Grange at any time in May after the 15th, and an invitation from Giant Oak Grange was received and read, asking Tulare Grange to join with them in a picnic. The Secretary was directed to write to Selma Grange and ask the members to join Tulare Grange and Giant Oak Grange in a picnic near Farmersville, where Giant Oak Grange meets, there being excellent train service between the two points—leaving Selma at 8:44 and reaching Farmersville at 10:20 A. M.; leaving Farmersville, on return, at 5:30, and reaching Selma at 7 P. M.

A letter from Hon. J. C. Needham to the Secretary, in reply to a letter written to him by request of the Grange, asking his assistance in getting a rural mail delivery near Tulare, was read. Mr. Needham says such rural mail delivery routes are established by the postoffice department, after a petition therefor to and investigation by the department, the proposed route to be about 20 to 25 miles and to include about 100 families. On such a petition being sent to the Postmaster General, Mr. Needham will use his influence to have such rural mail delivery route established.

The April subject for consideration, as subjected by the Lecturer of the National Grange, "Are Our Public Schools as Useful as They Might Be, and What Can Be Done to Improve Them?" was taken up and freely discussed by the members. The Grange made no attempt to arrive at definite conclusions on this subject. The use of public conveyances, calling for children in rural districts, taking them from their homes to school, and, after school, returning them to their homes, seemed to meet with general approval by the Grange. It is thought it will give a better attendance, prevent truancy and insure prompt arrival at school and return therefrom to home. In the construction of the schoolhouse care should be taken that there is ample light without glare, and seats and desks should be so arranged that the light shall come from that direction which will to the least possible extent cause injury or strain to the children's eyes.

As showing the reputation and good standing the Order of Patrons of Husbandry is making for itself, an article was read from "Public Economy," Hon. A. B. Hotchkiss editor and proprietor. The article speaks of it as "a national association of American farmers, organized in Washington, D. C., Dec. 4, 1867. Its place of meeting is called a 'Grange,' whether National, State or Subordinate. Its members are generally known to the public as Grangers, and yet, with as much propriety, every Mason, Odd Fellow or member of other organization whose meeting place is called a lodge, could be called a lodger.

"The State Grange of Patrons of Husbandry of California is made up of conservative, intelligent, prudent, painstaking, thoughtful men and women. It has no selfish object to attain. It studies equity, justice and the public good. It is the friend and supporter of education, freedom and progress. It believes in equal rights and equal obligations. Every member desires to do his full duty, as every good American citizen should do."

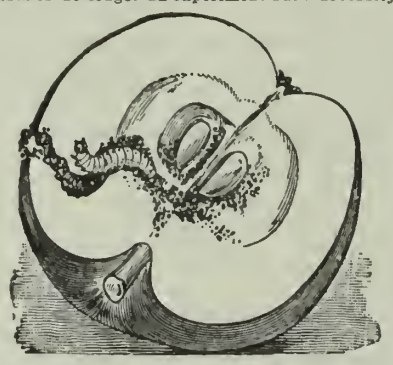
The Lecturer also read from a private letter he had received from Mr. Hotchkiss, in which he said, speaking of the Order of Patrons of Husbandry: "Your Order is the nucleus around which must again form the hosts of popular right; these great combinations are bound to get the 'big head' ere long; then again will come the Grange and line up against aggressive monopoly and call time. I look on the Grange as the key to our future prosperity, and shall write more about it in April."

In considering the present condition of grain crops, it was conceded rain must soon be had, or most of the grain will be cut for hay—very little for grain.

The Lecturer announced the May subject, for consideration at our next meeting, to be: "Why Do We Favor the Introduction of Nature Studies in Public Schools, and What Can We Do to Secure It?" Supplementary topic: "What Will We Do in Observance of Grange Memorial Day and Grange Children's Day? J. T.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had for the asking.

Black Leg Vaccine.

The cheapest and handiest form of single-treatment vaccine is that furnished by the Pasteur Vaccine Company, and consists of a special cord or string impregnated with the vaccine. It is always ready for use, and requires no outfit or set of instruments to apply it. There is no time or money lost in mixing, filtering, graduating the doses and injecting. Each dose is separate, and therefore there is no waste. Pasteur Black Leg Vaccine Cord is therefore by far the most popular form of vaccine, and its success is evidenced by the large and constantly increasing demand for it. The cord method dates from 1898, but it is rapidly displacing the old single-treatment vaccine in the powder form, with the troublesome mixing, filtering and injecting. However, the Pasteur "Double" Vaccine still holds its own as the best for pure bred or valuable stock, which should receive the double treatment in order to secure a higher degree of protection against black leg. Stock raisers are solely indebted to the Pasteur Vaccine Company for the introduction of black leg vaccination into this country, and the popularity of live stock vaccination and the resulting benefits can be noted from the fact that, in addition to its head office in Chicago, the Pasteur Vaccine Company also has branch offices in New York, Omaha, Kansas City, Fort Worth and San Francisco. The vaccines furnished by the Pasteur Company are the original and genuine articles being prepared by the very men who discovered Black Leg Vaccine in 1884 and who have been making it ever since. There is, therefore, no question of any experiment with Pasteur Vaccine, either on the part of the manufacturers or the users. *

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Every Feeder, Breeder or Farmer should have it for every-day reference.

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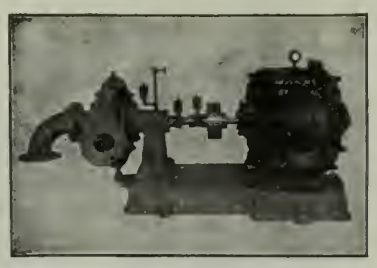

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They are made Horizontal and Vertical and Direct Connected to Steam or Electric Power.

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SULPHATE OF POTASH, MURIATE OF POTASH, NITRATE OF SODA, SULPHATE OF AMMONIA, BONE MEAL, SUPERPHOSPHATE, DOUBLE SUPERPHOSPHATE, THOMAS' PHOSPHATE, ETC., ETC.

Write for Prices; They Will Suit You.

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327 MARKET STREET.....SAN FRANCISCO, CAL.

Nitrate of Soda as a Fertilizer.

QUICK FERTILIZER.

There is nothing in the American market to-day that acts so quickly and surely as a fertilizer as

NITRATE OF SODA.

Apply to the surface in the spring. A small quantity does the work. Watch the crops closely and when they look sick or make slow growth apply the remedy promptly.

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316 California Street, - - - San Francisco, Cal.
Write to them for pamphlets.

Phosphoric Acid - - -

is necessary to bring out the flavor and quality of Fruits, and promote the growth of all kinds of Cereals. Most California soils are deficient in this important plant food, which is being steadily depleted by continual cropping, and must be replaced to obtain good yields. Try an application of

THOMAS' PHOSPHATE POWDER,
(Basic Slag)

The cheapest and most efficient Phosphate Manure of to-day.

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Dip & Wash (for Live Stock)

Dipping, washing or spraying live stock is essential for the cure of Scab, Mange, Itch, etc., and for killing and removing ticks, fleas, lice, etc. Lincoln Dip is composed of nicotine, sulphur and valuable oils, but contains neither lime nor arsenic. It is effective but not poisonous or injurious. Write for literature upon treatment of stock for skin parasites.

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Tanks!

When you buy a Water Tank get one that will not dry out and shrink.

The Patent Non-Shrinking Water Tank.

The only one suitable for dry, hot climates.
COSTS NO MORE THAN COMMON.

SILOS and TANK WORK of every description.

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THE OLD RELIABLE

LIGHTNING HAY PRESSES

HORSE AND STEAM POWER CATALOG FREE

KANSAS CITY HAY PRESS CO

429 MILL ST KANSAS CITY MO

Bale Hay With Wire.

A circular has been issued by the secretary of the San Francisco Hay Association as follows:

For a few days past much trouble has been experienced on the part of handlers of hay because of the distinction generally made between the use of rope and wire baling, a strong prejudice having existed on the part of many consumers against using wire-bound hay.

Now, it is a fact that in no section of the United States, except in the country immediately tributary to San Francisco, is rope used for hay baling to any extent. It is but a matter of custom with us, which could be entirely overcome in a very short time.

The advantages to the producer and handler in using wire are many. In the first place, wire is always cheaper than rope, pound for pound, and it takes the same weight of either material to bale a ton of hay. During the past few years an average saving of 35 cents per ton has been effected by using wire. In the second place, wire does not stretch as does rope, does not break as easily, cannot be gnawed by mice and therefore better preserves the shape of a bale should the same be stored for any length of time. It is a fact that all rope-bound bales will readily yield their end ropes, whereas wire cuts into the hay sufficiently to make it often impossible to pull the end wires from the bales. Experience has proved that wire-bound hay loses less in weight than rope-bound, whether the hay be stored or handled for the market immediately after baling. It has also been shown of late that wire, if properly detached from the bale, can be used over again, so that there is really no good reason why all should not consent to and advocate the baling of all hay with wire.

The San Francisco Hay Association has adopted resolutions favoring the use of wire entirely, which action has been indorsed by the country warehousemen. We ask your co-operation in this matter, believing it to be to your advantage in every way. If practically all this season's crop be baled with wire, which we believe will be the case, no distinction in price will be made between wire-bound and rope-bound hay, and by the next season wire-bound hay will be readily accepted by every one.

READERS should not forget the great Hereford sale to which we called attention in last week's paper, and of which the official announcement appears elsewhere in this issue. Denver is so situated geographically that it is the most central point at which to make a sale convenient to prospective buyers scattered over the range country. A cordial invitation is extended to the general farmer and ranchman who may desire a few females and a bull, as well as the more extensive beef cattle breeder who is desirous of a few carloads, to come and inspect the offering and give such prices as will be profitable to both buyer and seller.

Publishers of the "Pacific Coast Poulterers' Hand-Book and Guide."

PRICE 40c.

Manufacturers of Pacific Incubator and Brooder, Send for Catalogue.

OAKLAND POULTRY YARDS, 1317 Castro St. Oakland, Cal.

COTSWOLD RAMS.

Eighty head of imported Cotswold Rams for sale.

May be seen at Crows Landing on San Joaquin river. For mutton lambs they are unexcelled.

Inquire of KIRKPATRICK & WHITTAKER, Stockton, Cal.

Telephone Main 199.

Blake, Moffitt & Towne, DEALERS IN PAPER,

Nos. 55-57-59-61 First St., San Francisco, Cal.

BLAKE, MOFFITT & TOWNE, Los Angeles.
BLAKE McFALL & CO.....Portland, Or.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

MOTOR CARRIAGE.—No. 671,575. April 9, 1901. W. J. Woosley, San Francisco, Cal.

This invention relates to motor carriages. It consists in the mounting of the motor, intermediate and variable driving gears through which motion is transmitted upon the front axle of the vehicle and means by which the motor and associated mechanism are turnable in unison so as to steer the apparatus. It also comprises means for transmitting power directly to the front axle; and means for changing the speed and reversing the mechanism so that it acts as a brake.

GATE.—No. 671,582. April 9. 1901. J. G. Busch, Potter Valley, Cal.

This invention relates to a gate suspended from above so as to swing upwardly, and fulcrumed levers and connections by which it may be opened from either side by the approaching passenger. It also comprises latching devices, and slide rods on the gate for operating the latches and lever connections thereto.

FRUIT GRADER.—No. 671,646. April 9, 1901. R. G. Bailey, San Mateo, Cal.

The object of this invention is to grade or assort globular or similarly shaped fruits into sizes. It consists of a horizontal rotating disk with a rim beveled or sloping from the upper surface downward, and a series of adjustably curved rollers so spaced in relation to the rotating beveled surface as to permit the fruit, approximately globular in shape, to roll off in the proper place. As the rim or disk rotates over an inclined surface, the fruit will travel around the circle until it arrives at a space of sufficient size to allow it to pass while guides direct it to suitable receptacles.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING APRIL 9, 1901.

671,646.—FRUIT GRADER—R. G. Bailey, San Mateo, Cal.
671,906.—SOFA BED—C. Buhner, S. F.
671,582.—GATE—J. G. Busch, Potter Valley, Cal.
671,941.—HUSKING PIN—J. P. Flaughter, Ione, Or.
671,591.—ROPEWAY CONVEYOR—M. E. Hallidie, executrix, S. F.
671,592.—WAVE MOTOR—Hamilton, Hollingsworth & Perley, Los Angeles, Cal.
671,727.—WINDOW SCREEN—Hipolito & Masten, Los Angeles, Cal.
671,800.—POLYPHONE—N. Jensen, Eureka, Cal.
671,677.—CULTIVATOR TEETH—J. Killefer, Los Angeles, Cal.
671,601.—HORSE HITCHER—Ida N. Lachner, Baker City, Or.
671,914.—FISHING TACKLE—S. H. Nesbit, Los Angeles, Cal.
671,562.—GLOVE—Neuman & Franklin, S. F.
671,707.—HARVESTER REEL—S. Nixon, Clyde, Wash.
671,942.—LOCK—C. E. Smith, Oroville, Cal.
671,943.—KNOB—C. E. Smith, Oroville, Cal.
671,575.—MOTOR CARRIAGE—W. J. Woosley, S. F.
34,342.—DESIGN—L. W. Brown, Eugene, Or.
34,335.—DESIGN—J. D. Stassart, Portland, Or.

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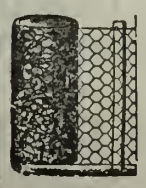

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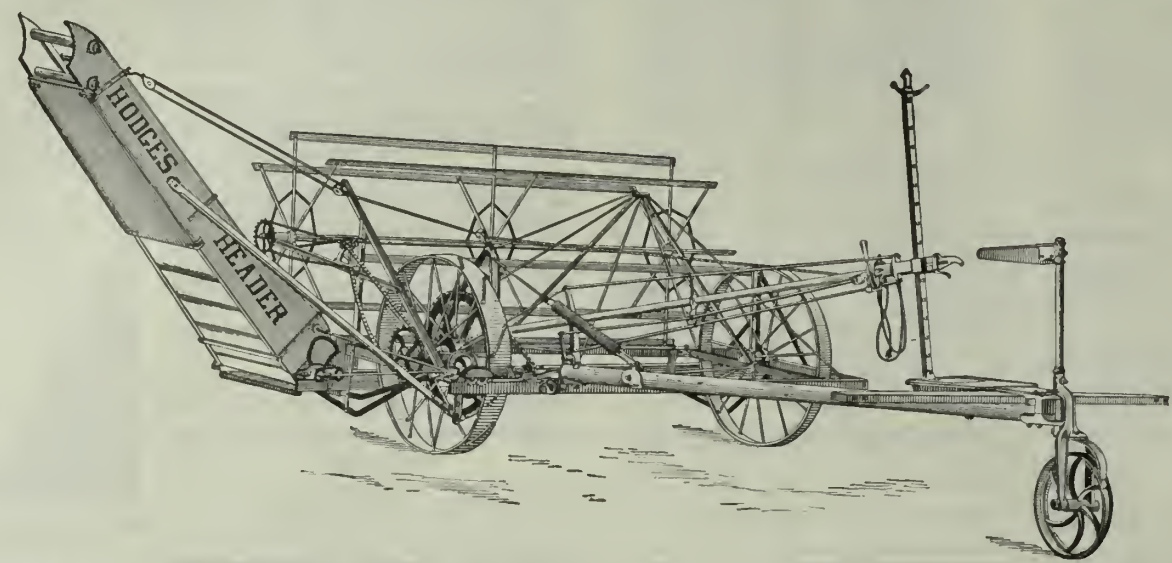

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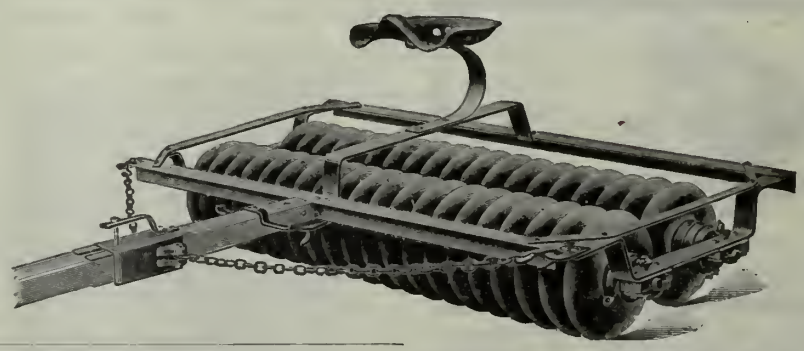

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 18. SAN FRANCISCO, SATURDAY, MAY 4, 1901. THIRTIETH YEAR. Office, 330 Market St.

The Big Trees.

The time for the conventional outing is rapidly approaching and it is appropriate to allude to the characteristic possessions which make California scenery peerless. Not only does this consideration move us to make reference to the "big trees," but there is another prompting which is more urgent, and that lies in the fact that these masterpieces of creative power are still in danger of destruction, and this generation still may earn the curses of all coming ages if it does not bestir itself to save them. The man who now has the option or title to the land on which stand the greatest and most accessible of these trees proposes to part possession of them only on payment of what he considers the lumbering value of of the land. His friends claim for him the loftiest sentiments which man could cherish as to the desirability of preserving these trees, but do not see how such sentiments should stand in the way of his cherishing also very exact views as to their value by board measure. These friends claim that he bought the land for the timber, not alone the big trees but the pines; that to set aside the big trees would practically destroy the value of the rest of his investment; that while he has had his money locked up in this venture other pine lands have been purchased by others, and he cannot now secure them; that he is patiently waiting for the Government to offer what he considers a fair price or the appointment of a commission who shall determine that value according to the business principles involved. This seems to be a fair statement of what is claimed for the owner, who stands ready to turn his saws into the greatest trees in the world to secure their lumber value. We have no disposition to be anything else but fair with him. He seems to be strictly business and there is no use wasting words in blame or appeal. A higher power must intervene and probably gold is the only judge with jurisdiction in the case.

It seems to us that the Government of the United States must address itself earnestly to the saving of these trees. The statement is made that it was through an error of the Government's employes that any man ever secured title to them. The intention was to reserve them forever from private ownership, and that was the only sensible thing to do, but there was some error made, so that the wrong sections were reserved and the right sections were sold decades ago. This being the case, it rests with the Government of the United States to correct its early error and restore these lands to the public domain at whatever sacrifice may be necessary. Suppose the trees are destroyed and it goes on record for coming generations to read that the United States refused to save the trees because some man who secured technical title demanded too much for his corner. This would not mitigate the curse an atom. What will posterity say of a government on the high tide of prosperity and wealth which would allow posterity to be robbed because some man insisted on board measure? The Government should not allow another mistake to destroy its chances of correcting a previous and culpable mistake. The Government should fill this man fuller of gold than the jumping frog of Calaveras was of lead before it should refuse to save these trees. If need be, build one less "destroyer" for the navy and let part of the money serve for saving rather than destruction. California has done well to save a splendid redwood district for all time to come, and did not consider a quarter of a million too much for this purpose. Now let the United States pay whatever a commission may decide and let the fact that any man ever put a lumber value upon them be forgotten as speedily as possible.

It would be almost an insult to the intelligence of Californians to attempt argument upon the desirability of saving the big trees. They are a part of our history. They have inspired our artists, orators and poets ever since they came to light as an undiscovered treasure of the State. The world's greatest minds have admired and adored them as "the greatest and oldest organisms to which in all ages God has given life." They are the last of a genus of plants which, driven about in cosmic evolution, came at length to seek refuge in California for surviving specimens. Paul Shoup, in the Sunset, whence comes our engraving, thus sketches the sequoian history: "They stood unnamed before man came into the world, for they were of the Tertiary period and in the Miocene times. At least fourteen species ranging to within 8½° of the Arctic circle, claimed prior rights to the continents. Driven south by the cold of the glacial period and then north again by the warmth of more recent times, no Eurasian species survived and only two in America," and they our big tree and our redwood of California.

In his argument before the recent California Legislature for the saving of the redwood, D. M. Delmas used words which should appeal as strongly for the saving of the Sierra sequoia: "There are many beautiful things in the world wrought by the skill and genius of man. The art of Italy, the works of the ancients in marble that are scattered o'er Greece and Rome, defying the touch of time; the dome of St. Peter's, which is an eternal monument to the master hand of Michael Angelo; the pyramids of Egypt and the cathedral at Florence. These were built by man, and if they fall into ruin man can rebuild them. But these trees which God planted and raised himself can never be replaced, even unto the end of time."

The White Horse Cavalry in a Big Tree Grove of the Sierra Nevada Region of California.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, May 4, 1901.

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The Week.

So it seems that the weather machinery simply slipped a few cogs and gave us a run of February weather on an April calendar. The temperatures of a few weeks ago, which knocked out so much of the fruit crop nearly everywhere, was hardly a pointer to the straight freezing of the closing of last week at several points. Probably the heavy cover of the leaves can claim credit for whatever fruit we have left in such locations. But the weather has been consistent, at least, for it matched midwinter temperatures with a midwinter rainstorm, and there has been a better soaking of the ground than one had reason to hope for, considering the way this winter was shaping its latter end. It comes too late for some things, truly, but in time for other things and for other localities, and so must be counted a great blessing. If it does nothing else, it will grow thousands of acres of wild flowers for the decoration of the State during the President's visit, and will delight, also, the train loads of good lookers and long talkers who are coming with him to see California. We shall have a land of sunshine and flowers with some style and vigor to it this year, surely.

We remarked last week the effect which the dry weather had upon the markets, and now the effect of the wet is quite as plain. Spot wheat is weak but unchanged in prices, but wheat futures are lower. Barley is dropped both on spot and futures, and has to-day an unsettled phase—high if you wish to buy, low if you wish to sell. There has been quite a movement—two full ships of wheat and barley, chiefly the latter. Oats are light in stock and rates unchanged. Corn is stiff. Beans also are unchanged but easier in tone, as holders seem more ready to sell. Hay is weak but not lower. The rain is counted upon to spoil much hay which will have to go at low rates, and it is believed that strictly choice may hold up well. Beef is quiet and steady; mutton and hogs are weak and lower. Eastern hogs are now arriving. Butter is steady considering the situation. Buyers are active and are paying in the country more than the equivalent of the present city prices. There have been some orders for distant shipment received and there is much interest in securing butter for packing and storage. Cheese is easier for flats, but small cheese is scarce, having been cleared out by large orders. Eggs are unchanged, with a good demand for storage which is helped by stiff prices at the East. The poultry market is in good shape, with no heavy arrivals. Old potatoes are scarce and strong and the market is apparently being worked by a clique to clear out their holdings. They are anxious to sell at the high rates, but not to buy. A few new potatoes are bringing stiff figures. Onions are unchanged; more Australians are coming, but mostly sold to arrive. Citrus fruits are plentiful and the best lots bring fair prices. Early deciduous fruits, chiefly berries, are held back by the rains. Some blackberries are in from Covina, Los Angeles county. Dried apricots and apples are firmer, and supplies well cleaned up. Prunes are nominally higher, but there is no rush. The irreverent are declaring that the very large sales by the Prune Association on the last day of the low rate were simply to fill a pool of the packers, who needed that much fruit to secure the bonus of $35,000 due them by agreement for selling 60% of the crop. If that is true, this bonus is rebate enough to hold prices down for awhile until the short crop coming works fast on the trade. Good shipping wool is firmer and moving freely at quotations. By the time this is over, perhaps the scourers will take hold of the lower grades. The outlook seems favorable.

The prune growers are making history quite fast this week and we are not prophet enough to anticipate their conclusions. There has been a steady run of hard thinking and close talking at San Jose for the last few days, and quite a lot of plans have been laid for the nominating convention, which happened just after our sheets went to press. The freezing of the last few days of April enters as a sharp factor, for it can hardly be that anything but a very short crop will be secured this year in the great Santa Clara district. The Association has sold fruit enough to declare a dividend of 1 cent a pound in favor of those who had received nothing heretofore. One-half a cent is payable immediately and ½ cent within thirty days. The value of the sales by the Association in the last fifteen days is about $600,000. There is talk of raising the price of the holdings of the Cured Fruit Association above 3 cents. All apprehension as to what shall be done with the prunes has passed, and the manager of one of the leading San Jose fruit houses is said to have given assurance that his company would be willing to take all of the prunes in the hands of the Association and agree to sell them on a 3-cent basis. It promises to be a much easier task for the Association the coming year, and they may have time to learn what to do with the next bumper crop when it comes along.

Oranges and lemons are still going northward. E. K. Alpaugh of Sunny Slope, San Gabriel valley, has grown the first carload of oranges ever sent from California to Siberia. The fruit is now on its way for Vladivostok by direct steamer from Portland, Or. The Valencia late variety was used for the shipment. The oranges were carefully wrapped and the boxes were strapped with wire. The San Diego lemon growers are getting up a whole trainload of lemons as an experiment by the northern route. It will consist of fifteen cars and will go from there by the Pacific Coast steamer line, making connection at San Francisco for Seattle in about two weeks. The shippers believe they will catch the Eastern market about right then. By that time also it is expected that the result of the recent trial shipment will have been learned. Diplomacy offers no finer work than the transportation managers are getting out on each other. It is now believed that the interview which stated that the northern roads did not want traffic which belonged to the southern roads was merely a blind to fool the southern roads, for the last sentence of the article is to the effect that the Great Northern road would haul all the fruit brought by the steamship company, and both lines are doing all they can to get the business. San Diego proposes to work on this line. It is a little amusing that San Diego's great expectations of terminal blessings, with an overland line of its own, should arrive by way of Seattle. But strange thing are happening nowadays.

Preparations for the Flower Show and Floral Congress to be held in this city May 14 to 18 are going forward in a promising manner. About fifty talented speakers have accepted places on the programme.

QUERIES AND REPLIES.

The Bearing Habit in the Tragedy.

To THE EDITOR:—My Tragedy prunes do not bear. In fact, it seems to be a general complaint all over our neighborhood that the Tragedy is a poor bearer. The trees bloom and set in bunches; when the plums get to be about the size of a grain of wheat, and some as large as peas, they turn yellow and fall off. Occasionally here and there I hear of a man who has a good crop of Tragedys, which shows that they will bear under some conditions. I mail samples, showing the ones that grow and the ones that turn yellow and fall off. The few good ones seem to grow very thriftily, while the others all look well until they get about so big, then they seem to stand still, lose color and tumble off. Is the trouble in the soil?—READER, Lincoln.

Your samples of Tragedy prunes represent the general experience with this variety in different parts of the State, where it is coming to be so widely condemned for non-bearing that many are grafting the trees over to other varieties. The trouble seems clearly to be one of lack of pollination, and association of other strong pollinizing varieties with the Tragedy will work an improvement. It is a fact that on the Sacramento river, where the Tragedy prune originated, and where it is largely grown for Eastern shipment, they also have trouble with its shy bearing; but where the tree is adjacent to other varieties it bears good crops. Mr. E. A. Gammon of Courtland has interplanted and grafted in the Clyman plum in connection with his Tragedy trees, and the result is full bearing of the Tragedys. This is thoroughly reasonable, in accordance with what we know of the effects of lack of pollination, and it now seems as though this would be the proper course with the Tragedy whenever it is found to be a shy bearer. It is manifestly not a matter of soil, because, as your own case shows, the other fruits which are duly pollenized are thrifty in growth and otherwise satisfactory. We advise you to bud some of the branches of the Tragedy with the Clyman during the coming budding season, as it is too late for grafting or planting in young trees of that variety.

A Great Rose Proposition.

To THE EDITOR:—There is located near here a Banksia rose bush whose branches cover several sheds and part of a large barn, making a solid mat perhaps 30x50 feet. It is said to be the largest rose in the State. It is suggested that this be transplanted to a spot near the railroad depot to astonish the Eastern tourists, and particularly to be exhibited to the presidential party on May 10th. We realize that it will be a considerable undertaking; but if the chances are for success, a reasonable sum would be spent. Do you consider it feasible?—DECORATOR, San Luis Obispo.

A rose bush of the dimensions you mention could be successfully transplanted, providing a solid block of earth 6x6 feet and 3 or 4 feet in depth could be taken up and moved without shattering or cracking the block. This could be done by digging down all around and putting in place a box of strong planks held together with rods well bolted. When this is in place it would be necessary to mine under the block and put in a plank bottom. This, of course, would cost a great deal of money and movement would have to be accomplished by suitable machinery. The French have done this with large-sized trees and have successfully moved them for considerable distances. In your case, however, the handling of the branches of such extreme spread would so injure the foliage that the plant would not be handsome or lifelike after the moving was accomplished. It is too late to expect a new growth of foliage after the branches are redisposed in their new position. If it were a month or six weeks earlier this might reasonably be expected. Our opinion is that under the present circumstances, even with a very considerable outlay of money and the services of most careful men, the venture would be disappointing, for we can not see how the plant would be in anything like show condition at the time stated.

Osier Willows.

To THE EDITOR:—Can you give me any information concerning the growth and care of the Osier willow, i. e., the willow used in making baskets? Can it be grown successfully in this part of the State.—F. M. W., Los Angeles.

The Osier willow grows beautifully in California wherever moisture is enough to maintain it through

the dry season. The opportunity, however, to grow willow for basket making is somewhat restricted in this State, especially since the use of rattan has increased so greatly. You would probably have to rely upon the Los Angeles market, because there are willows growing in the upper part of the State which furnish San Francisco all that could be profitably used. A little inquiry among the basket makers in Los Angeles would soon show you what local opportunity there might be. In addition to growing you have to provide simple machinery for steaming the stems and removing the bark before the basket maker will buy them. The growth of willow is not a thing which one can undertake without careful inquiry as to what can be profitably done with the crop.

Painted Lady Butterflies.

To THE EDITOR:—Enclosed you will find specimens of a moth which are very numerous in this vicinity. They are flying in a northerly direction and do not stop for anything, but keep right on as though they had a very important mission farther up the coast. They are in countless thousands. What are their traits, good or bad?—PHILIP E. STRICKLER, Edenvale.

The butterflies are pyrameis cardui and are known as "painted ladies" from their variegated colors. Entomologists consider them most ubiquitous of the butterfly tribe, as they are found over such wide regions of the earth. They occur in enormous numbers, for instance, in northern and eastern Africa, and when they reach a certain abundance in any region they undertake migrations and the insects spread even to localities where they cannot maintain themselves. In England they are, during some years, almost absent, but may suddenly appear in large numbers as immigrants. Dr. Holland, in his excellent "Butterfly Book," says they are found all over Europe, all over North America, in Africa save in the jungles of the Congo, throughout South America, in far-off Australia, and in many islands of the sea. At some times they are scarce, and then again there are seasons when they fairly swarm, every thistle top having one of the gaily colored creatures seated upon its head, and among the thorny environment of the leaves being found the web which the caterpillar weaves. The caterpillar is spiny and is found on weeds of several kinds. The butterfly is orange brown with white and black markings, including a number of black eye-spots. It is fleet on the wing, about 2½ inches in full spread of wings, and, as stated, is easily guessed at from its abundance at certain times. Sometimes the heliotrope bushes are fairly alive with them. So far as we know, they are of no economic account.

Ashes and Hen Manure.

To THE EDITOR:—I see in some paper that ashes and hen manure are not good mixed together. Please explain why potash and ammonia will not do together. I keep ashes spread on floors of hen houses and every Saturday clean them out and spread the manure on the garden and incorporate with soil. Please correct me if I am wrong in doing so.—SUBSCRIBER, Cloverdale.

Wood ashes and hen manure should not be mixed until they are covered into the soil, because the ashes will set free the ammonia into the air and cause it to be lost. Use dry road dust or gypsum or sifted coal ashes to cover the droppings, but apply the wood ashes directly to the soil. Your method of handling your poultry houses is admirable, but you should use something which is simply an absorbent and not diposed to act chemically.

Sunburn and Rose Rust.

To THE EDITOR:—I send you some old wood of my rose bushes, also leaves with orange-colored spots on the under surfaces. What are the causes of these troubles?—READER, San Rafael.

The roughness on the bark of the rose wood which you send seems to be the result of sunburn taking the form of small blisters, etc. We have had much of this on our own rose bushes and find that it is obviated whenever the bark is protected from the hot sun. It seldom amounts to any injury except on standards, where one wishes to retain the stem for a long time. Roses grown in bush form and pruned, so as to make a constant renewal of the wood, are practically free from this injury. It may occur upon the outer surface without immediate injury to the inner bark, which is the growing part of the stem. This seems to be the case with one of your specimens at least, but when the stem gets into such a condition as shown by the other specimen it should be pruned out and a new shoot grown to take its place.

The orange-colored spots on the leaf is a regular disease of the rose, commonly called "rose rust." Some varieties do not have enough of it to injure their growth particularly; others are quite injured by it. The remedy for this is the Bordeaux mixture. It should be applied early in the spring as soon as the first sign of the disease appears and renewed from time to time to protect the newer foliage. Use a nozzle which will shoot upward from below.

Gumming of Prune Trees.

To THE EDITOR:—My prune trees ure on bottom land, very rich and rather heavy. On the trunk of the tree and on some of the limbs blisters will form, puff up and burst and sap will run out. Then the bark will dry as hard as horn and, in cases where the blisters extend around the trunk or limb, it will kill the tree or limb. This begins about as soon as sap begins to flow, and blistering stops about this time of the year. These blisters occur as often on the north side of the tree as on the south, and on trees as much as five years old, whose trunks seem to be well shaded. In some instances I find the bark dead all around the trunk from ground to limbs, with the blisters on the limbs, and still the tree is growing very well except looking a little yellow. I think I help them by splitting the bark in several places, up and down.—GROWER, Healdsburg.

The gumming of prune trees is due to different causes. In the extreme heat of the foothills trees gum very badly and sometimes to such an extent as to be almost worthless. This seems to be due to the high heat, which does not agree with the tree. The gumming in other parts of the State is generally due to some injury to the roots, when prune trees budded upon peach or almond stock are planted in bottom land, rich and heavy. There is apt to be so great retention of water during the winter time that the small hairs of the roots are destroyed by the water and the trees brought into distress, which is manifested by such gumming as you describe. This is not apt to occur with the prune growing upon the Myrobolan root. Is it possible that your trees are worked upon peach or almond root? There seems to be no remedy for the trouble except correction of the soil conditions, such as might be had by under-draining, so as to prevent too great retention of water during the rainy season. The treatment of the gumming places would be to open them up as soon as seen, allow all the gum and sap to run out freely and remove discolored bark, tying a plaster of clay or something of that kind to keep the exposed surface from drying out until the new bark is formed upon it.

The Olive Twig Borer.

To THE EDITOR:—Find enclosed herewith two olive twigs cut by a beetle. These insects are fast pruning and I fear destroying my olive trees. They worked on them some last year at this time but are much worse this spring. Will you tell me the name of the insect and the easiest way I can get rid of it?—GEORGE J. HATCHER, Butte City.

The insect is a slim, dark purple beetle about half an inch in length which has been doing this kind of work in California for a quarter of a century to our knowledge, and probably much longer, for it is a native son. Its name is polycaon confertus. It lives in native shrubs, like the manzanita, and is often abundant in old vine stumps, etc. Its work on fruit trees is usually worse where orchards are near to uncleared lands. So far as known it does not breed in fruit trees but simply takes to them for lunch. No one has succeeded in preventing its work, but it has long been held that it could be discouraged by spraying with some nasty wash like whale oil soap early in the spring, about the time its picnic season begins. Fortunately it has never been abundant enough to do harm except on young trees whose shape is spoiled by loss of twigs. Older trees do not usually lose enough to hurt.

San Jose Scale.

To THE EDITOR:—Please find a portion of a limb of one of my peach trees. I would like to know what is the matter with the tree. It has few leaves and little fruit, and the gum seems to be oozing out. The tree is five years old and is not doing well. Please let me know in your next paper what it is and what to do for it.—P. O. BALDWIN, Dos Palos.

This is a very bad case of San Jose scale, the bark being encrusted with the minute insects. When this is allowed to take place trees are sometimes killed outright. If you have only one tree infested it would be well to burn it and plant a new tree next year. Probably, however, if you look closely you will find the same trouble on other trees, though not so far advanced. The best thing to do now is to spray several times this summer with well made kerosene emulsion and next winter prune well and give the trees a good spraying with the lime, salt and sulphur wash.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 29, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cold northerly winds continued until Saturday. Rain began falling early Sunday morning, extending throughout the valley. At Sacramento the precipitation up to 5 o'clock this morning amounted to 1.76 inches, and at Red Bluff 1.04. This rain will be of immense benefit to all crops, especially to grain and hay, and will revive pasturage. The long dry spell has been detrimental to the late sown grain, but it is now believed a fair crop will be harvested. Early grain is in good condition. Fruit trees will also be benefited by the rain. Late reports show that nearly all varieties of deciduous fruits are in good condition, and that the damage by April frosts will not materially reduce the crop. Grapes are looking well. Cherries and strawberries are plentiful. The first carload of cherries was shipped from Vacaville on the 25th.

COAST AND BAY SECTIONS.

The rainfall of Sunday and to-day, which was heavy in the central and northern counties, will greatly improve the condition of grain, hay and pasturage, and benefit orchards and vineyards. Late sown grain in some sections was in very bad condition and may yield only a light crop, but the early sown had not suffered much for lack of rain and will yield a good crop. Hay is yielding a heavy crop. The severe frosts on the 26th and 27th seriously damaged deciduous fruits and grapes in the Santa Clara valley and in Alameda and Contra Costa counties. Apricots were so far advanced that but little injury was done, but cherries, prunes, plums and pears were badly injured, and the crop will be very light.

SAN JOAQUIN VALLEY.

Clear and cool weather, with drying northerly wind, has prevailed during the week. The cool weather has been beneficial to the grain crop in modifying the effect of the north wind. Rain was greatly needed in all sections for both grain and fruit, but the crops were standing the dry weather better than was expected. The rain of Sunday evening and Monday morning, which covered the northern portion of the valley, will be of the greatest benefit to all crops. Reports as to the condition of the grain crop vary in different portions of the valley. The fruit crop in most places is doing well, except prunes, which are falling badly, and will only be a fair crop in a few localities. Haying is progressing and the crop will be good in most places. The onion crop in San Joaquin county, which is now being harvested, will be the largest ever grown. Green feed is still abundant and stock of all kinds are doing well. Vineyards and orchards are being irrigated.

SOUTHERN CALIFORNIA.

Nearly normal weather conditions have prevailed during the week, with fogs at night along the coast and generally clear days. The fogs have been beneficial to grain and hay. Late sown grain is in bad condition and will not make a crop. The early sown will yield a fair crop in some sections. Haymaking is progressing, with a heavy yield and of excellent quality. Sugar beets need rain. Walnuts are looking well. In the vicinity of Santa Maria apricots have been seriously damaged by frosts, which have been frequent during the week.

EUREKA SUMMARY.—Heavy frost Thursday morning throughout the valley practically ruined prunes and severely injured cherries, quinces, peaches and pears; also greatly damaged grain. Pastures and gardens much benefited by rain.

LOS ANGELES SUMMARY.—Bean land ready in some sections for planting. Farmers in other sections waiting for rain to prepare ground for beans and corn. Haying continues. Rain now would do as much harm as good.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 1, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	1.34	45.93	47.95	40.71	36	58
Red Bluff	1.54	24.21	21.76	21.83	42	76
Sacramento	1.98	14.50	17.36	19.23	44	76
San Francisco	1.50	20.51	18.10	21.68	44	58
Fresno	.62	11.00	8.30	8.37	38	82
Independence	T	5.81	3.43	4.48	42	78
San Luis Obispo	3.96	30.84	15.82	16.40	40	78
Los Angeles	.76	14.93	6.10	16.75	44	72
San Diego	.18	10.84	4.44	9.27	52	66
Yuma	.00	3.60	1.29	2.85	52	94

THE POULTRY YARD.

Poultry Diseases in Oregon.

The Oregon Agricultural Experiment Station at Corvallis has done an excellent thing in publishing a bulletin by Prof. E. F. Pernot, bacteriologist of the station staff, on some poultry diseases which he has studied in western Oregon. Our California readers will recognize as also prevailing here the troubles which Prof. Pernot describes. For this reason we have secured the permission of the Station to reproduce the bulletin in our columns, and thus minister to its wider circulation and usefulness:

Plate 1.—Hen Dying with Tuberculosis.

AVIAN TUBERCULOSIS.—Avian tuberculosis is a contagious disease, caused by the presence of the tubercle bacilli, which is to fowl as tuberculosis (consumption) is to man or animals. The germs, while growing in the body of the fowl, appear to be identical with those in mammals, with the exception of their being a trifle larger and more vigorous; but when artificially grown in bouillon, or glycerine agar, at a high temperature, their morphology differs materially from the others.

The pathogenesis of this germ to animals has not been satisfactorily demonstrated. My experiments of inoculating guinea pigs with different quantities of the fresh tubercles, taken from the intestines and liver of a hen and macerated with a small quanity of bouillon, have given negative results. This test was by no means satisfactory or conclusive on account of the impossibility to obtain a sufficient number of lower animals at a time when they were needed, and no positive conclusion can be deducted from inoculating such a small number, especially as guinea pigs are slightly, if at all, susceptible to the disease.

The first outbreak cited was that of a hen sent to the Station from a flock in which six hens had already died of the same disease. In order to study the symptoms, the bird was kept three days, until its death. The day before its death it was photographed, and presented the appearance as seen in Plate 1, being very much emaciated.

Although the hen was a graded Plymouth Rock which would, in normal health, weigh about four pounds, it was reduced to only twenty-two ounces. At the post mortem examination the bird was found to have generalized avian tuberculosis, the digestive tract being the original seat of the disease. This was evident by the extreme growth of the tubercles on the intestines (see Plate 2, Fig. 1). The mesentery was a network of tubercles presenting the appearance of bead work. The liver was an infiltrated mass of yellowish colored tubercles so closely packed together that they enlarged that organ four times its normal size. See Plate 2, Fig. 2, in which a portion of the liver is shown. The enlarged liver, together with the tubercles on the intestines, completely filled the abdominal cavity; the spleen contained a great many small tubercles; the heart had one tubercle, about the size of a wheat kernel, on the right auricle. The lungs were affected in one spot only, and that at a point where the liver came in contact with them. Nearly all over the body the connective tissue between the skin and the flesh contained tubercles about the size of millet seed. No external growths were found on the legs, wings, head or any other part of the body.

The first noticeable symptom of this disease is, generally, lameness; the bird becomes more or less mopy, and gradually loses flesh until at the time of death it is a mere framework with feathers. The appetite is good throughout its sickness; at times it even becomes ravenous for food, and, although it eats heartily, this does not seem to appease the hunger. Toward the latter stages of the disease there is nearly always a persistent diarrhœa and the evacuations are accompanied by a discharge of a white or yellowish viscid matter. In all the specimens received, this matter was carefully examined and in each case the tubercle bacilli were found in countless numbers.

When the tubercle on the intestine reaches a certain period of its growth, there is a breaking down of the intestinal wall, and the germs are passed out with the fæces, thus accounting for the rapid transmission of the germs from fowl to fowl, for in nine cases out of ten the chickens' food is contaminated with their excrement.

To illustrate the danger of spreading this disease, the writer was called to visit a farm where it was found that fifty chickens had died of tuberculosis. In order to call the chickens together for our inspection, the owner scattered a handful of wheat on the ground of a run, where six choice blooded fowls had died some time previous. Some of the wheat fell on the fresh excrement, and, upon picking up several kernels with forceps, the under side of each was found to be soiled, but a chicken would not hesitate picking it up and swallowing. So if there were one sick bird passing germs, it would be only a matter of time that all would become infected. This offered an excellent opportunity to point out the danger of feeding in this manner.

There is still another dangerous and bad practice in vogue—that of leaving the carcasses of diseased fowls to decay or to be eaten by the hogs or chickens. They should by all means be buried deeply or burned; it will pay any poultry raiser to do this.

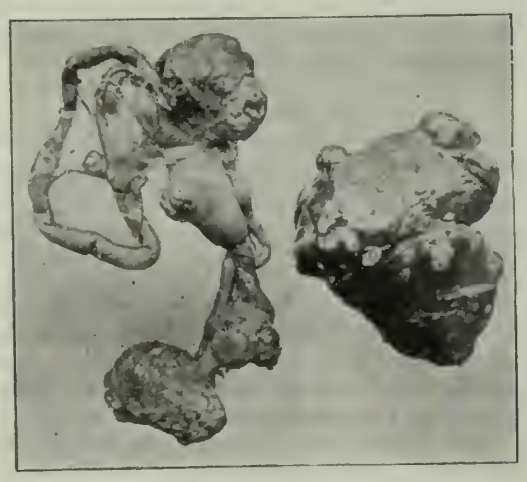

FIG. 1. FIG. 2.
Plate 2.—Tubercles on Intestines and on Liver.

We are as far from solving the problem of a remedy for this disease as we are from curing consumption in man, therefore nothing can be said yet, except to urge the necessity of sanitary precautions and the early removal and destruction of sick fowls from the flock, as well as thorough disinfection of the premises.

During the past year there were six outbreaks of avian tuberculosis discovered, ranging in a loss of from five to fifty chickens in a flock. The lesions were all practically the same as those already described, with the exception of one case, in which the hen had a tuberculous leg, as illustrated in Plate 3.

The hen's leg in this case had evidently been inoculated with the tubercle bacilli by picking it with an infected beak at that point, or from some other external injury. Several hens from the same flock had previously died from generalized tuberculosis. Microscopical examinations were made from time to time of the exudate from this hen's leg and the bacilli were always present. A hen in this condition should certainly be removed from the flock and destroyed to prevent further infection.

Reports show that the fatality among grown chickens, especially older ones, is greater from this disease than from any other. There appears to be no record of the transmission of these germs from fowl to man, with fatal results, although the possibility may exist. The flesh of a fowl in an advanced stage of avian tuberculosis can not be wholesome as an article of food and should not be eaten.

CATARRH AND CATARRHAL ROUP.—There have been a great many specimens of chickens and turkeys sent to the Station this year which were suffering from catarrh and catarrhal roup. This trouble seemed to have prevailed in many localities, with more or less fatal results. Among the young chickens it became epidemic, destroying an immense number. Experiments to find a remedy for this trouble were conducted with the specimens received, and the following has proven eminently successful:

A 2% solution of permanganate of potash in water, or two ounces of permanganate to six and one-half pints of water, was used. The fowl is grasped by the body with one hand and by the neck with the other. The head is then plunged into this solution, completely submerging it, and held there until the bird is nearly choked, then removed to allow it to breathe; this will cause it to sneeze, and, in so doing, force the solution through the air passages, thus reaching the affected parts. Repeat this operation three times while the bird is still in hand, and at least twice a day, so long as there are any evidences of the disease left. Care should be taken not to strangle the bird by holding its head under the solution too long, and, on the other hand, if not held long enough, the solution will not reach the desired parts. If an incrustation or scab has formed over the nostrils it should be carefully removed by moistening with warm water and with the aid of a toothpick; this must be done before immersing the head in the solution.

Plate 3.—Tuberculous Leg of Fowl.

The next step is to take a part of the solution, dilute it with four times its bulk of water, and give it to the fowls to drink. They should have nothing else but this to drink for three or four days, keeping it fresh each day. If the trouble reappears, repeat the operation of dipping the head until a cure is permanently effected. A chicken or a turkey that is worth anything is worth this trouble to cure.

FAVUS.—One outbreak of favus was found during the past year. It is commonly known as "baldness" or "white comb," and is caused by a fungus named the Achorion schonleinii. In mankind the disease is known as tinea favosa, or favus.

Favus is a disease of the skin which first manifests itself by small white or grayish spots on or near the comb. The spot is very small at first, gradually becoming larger until the whole surface is covered with a scaly crust. The feathers become dry, ruffled and eventually fall off, leaving the skin bare, from whence it derives the popular name "baldness." It is a contagious disease which is transmitted from bird to bird, and whenever an abrasion of the skin receives the spores the fungus develops very rapidly. It is not fully known just how the fungus spreads all over the head and neck of the fowl unless it is by the rubbing of one part of the body against another, or by scratching. Artificially grown on slant nutrient agar the colonies remain isolated until they grow sufficiently large to touch each other and form a white scab along the line of inoculation; but when a spore is accidentally deposited near the edge of the test

tube, the colony developed from it remains isolated throughout its existence. If there be too much condensation water in the tube, the whole surface of the slant will become covered, especially if the tube is handled after being inoculated.

A wise precaution in the treatment of skin diseases in fowls is to remove the bird for that purpose. For instance, in the treatment of favus, if the scales are rubbed off and allowed to drop on the floor of the coop or their runs, other fowls will become infected, because the scales contain innumerable spores. Any scales removed from an affected bird should be burned, for "an ounce of prevention is worth a pound of cure."

In the treatment of this disease it must be borne in mind that we are dealing with a fungus whose mycelium penetrates beneath the surface of the epidermis where external applications cannot reach without some preliminary treatment to remove the crusts, which should be accomplished by the aid of some blunt instrument, or by such means as would remove dandruff from the head, care being taken not to cause an abrasion of the skin; then apply an ointment made from vaseline and 2% carbolic acid, which may be bought ready prepared at almost any drug store. Carbolic acid one part, soft soap twenty parts, well mixed, has been recommended.

Scabies.—Plate 4 is from a photograph taken of the leg of a hen afflicted with "scabies," or "scaly legs," and is introduced here to illustrate the difference between scabies and tuberculosis of the legs. Scabies is caused by the presence of a mite known as Sarcoptes mutans, which penetrates beneath the epidermic scales. Dr. Salmon writes that, by burrowing, these mites set up an irritation which leads to a multiplication of the cells of the part and an exudation of serum. It is by the union of these two conditions that the white powdery crusts are formed, which raise the epidermic scales from their normal position. If the crusts are removed and the under surface examined with a lens, they are found to contain a large number of depressions, in each of which a female egg, containing sarcopt, is lodged. The larvæ, males and younger females, are found wandering beneath the crust. The latter contains so many cavities that it has very much the appearance of dried bread. As the crust thickens by deposits on the inner surface, the cavities first formed become smaller by the drying of the walls surrounding them, and the sarcopt abandons this location for a position nearer the flesh, where there is more moisture. The mites are therefore found only on the inner surface of the crust, although the cavities, or honey-combed appearance, exist throughout the whole substance. The treatment, briefly stated, is to remove the affected birds to prevent the spread of the contagion. The houses they occupy should be thoroughly cleaned, and the roosts and other woodwork should be scalded with boiling water, or covered with carbolated lime wash.

Plate 4.—A Scaly Leg.

The treatment of the afflicted birds is to remove the loosened scales in order to bring the remedy in contact with the mites. To accomplish this, the legs should be soaked for a sufficient time in warm water, to which some soap has been added. When thoroughly softened, the loose scales may be removed without causing the leg to bleed. After this has been done, the legs are dried and treated with a good coat of ointment made with balsam of Peru, one or two drachms to one ounce of vaseline. The disease is not a difficult one to cure if the preliminary treatment is thorough and the loose scales and crusts are all removed. There are cases of tuberculosis, however, which affect the birds' legs by forming an external growth, which very much resembles scaly legs; but by treating as above described, the diseases may readily be differentiated. The crusts in scaly leg are easily removed, while in tuberculosis it is impossible to do so.

Balanced Rations.

To the Editor:—Professor M. E. Jaffa, of the University of California, has very kindly sent me formulas for balanced rations for poultry feeding. Thinking these might interest and profit your readers engaged in poultry raising I forward copies for publication:

FORMULA NO. 1.

Wheat	7 pounds.
Barley	4½ "
Bran	4½ "
Oil cake meal	1 "
Meat meal	2 "

FORMULA NO. 2.

Wheat	7 pounds.
Barley	3½ "
Bran	3½ "
Corn	3½ "
Oil cake meal	1 "
Meat meal	1 "

FORMULA NO. 3.

Alfalfa hay	2 pounds.
Bran	3½ "
Wheat	7 "
Meat meal	1 "
Barley	4½ "

Prof. Jaffa also says the new process linseed oil cake meal is better for poultry feeding than the old, because the latter contains more fat than the former. The fat element should not be the one to consider when buying the concentrated nitrogenous materials. The less fat the better. A. W. Robinson.

Napa.

THE STOCK YARD.

Jersey Grades for Beef.

In this State there are many Jersey grades, and in the newer dairy regions the objection to the Jersey grades as inferior for beef purposes is commonly urged. The Utah Experiment Station recently concluded a test on feeding Jerseys for beef, the results of which should be of general interest. In the following the term lucerne signifies alfalfa.

Calves Nos. 1 and 2 were twins from a grade Shorthorn, by a pure-bred Jersey bull. They weighed together 116 pounds at birth, on Aug. 9th; were castrated at a few weeks old, and first week were fed all whole milk, second week gradually changed to half whole milk, half skim milk, third week changed by reducing whole milk, until at the end they had three-fourths skim milk and one-fourth whole milk. Fourth week gradual reduction of whole milk continued, until at the end of the week they had all skim milk and began on grain. After this, until five months old, had skim milk, hay and grain, after which skim milk was reduced by diluting with water, and hay and grain increased. On May 10th, when nine months old, they had eaten 480 pounds whole milk, 6974 pounds skim milk, 400 pounds grain, 1736 pounds lucerne, and had gains of 694 pounds—a little more than 1¼ pounds a day each.

From May 9th to June 6th, twenty-six days, they ran in pasture with other stock and gained 74 pounds—nearly 1⅓ pounds per day each.

From June 6th to July 5th they were in ¼-acre pasure, then in ½-acre pasture until Sept. 20th, then on ⅓-acre pasture until Nov. 9th. During 152 days one of them gained 244 pounds and the other 214 pounds.

From Nov. 9th to Dec. 1st I had corn stover and lucerne hay, and one shank thirty pounds and the other thirty-four pounds, leaving weights 702 and 576 pounds, respectively. They were tied in the barn, but had several hours in the yard daily from Dec. 1st to May 22nd and 31st. The larger one ate 2251 pounds of lucerne, 1228 pounds of grain and 360 pounds of roots, and gained 238 pounds in 173 days, and the other ate 1904 pounds of lucerne, 1109 pounds of grain and 360 pounds of roots in 182 days, gaining 222 pounds.

They were sold to a local butcher for $36.08 for the larger and $30.64 for the smaller, which gave profit over cost of food at $12.78 on one and $8.35 on the other, they being then about twenty-one months old.

Calf No. 3 was nearer of a dairy type, the sire being the same and the cow of mixed breed. From Feb. 4th, when dropped, to June 23rd, feeding was same as other two, and gain was 258 pounds. June 23rd to Nov. 9th had run of a ½-acre pasture and 656 pounds skim milk, and gained 208 pounds. From Nov. 9th to Dec. 1st corn stover and lucerne hay, both poor quality, and lost ten pounds. Dec. 1st to May 31st kept in the barn with the same treatment as the two first described and gained 214 pounds. Sold at sixteen months old for $29.36, or $9.38 above the cost of food given.

Calf No. 4 was from grade Red-Polled cow by the same Jersey bull, dropped March 11th, weighing seventy-six pounds. Fed the same as other calves until Sept. 6th and gained 246 pounds. From that date to Nov. 9th was in pasture and gained forty-two pounds; but from Nov. 9th to Dec. 1st had alfalfa and corn fodder and lost two pounds. Dec. 1st to May 19th was tied in the barn, but given freedom of corral about five hours each day. Ate 1171 pounds of lucerne, 733 pounds of grain and 322 pounds of roots, and gained 222 pounds in 170 days. On May 19th was turned into large pasture with other stock and reduced weight from 588 pounds to 550 pounds in six days. May 25th turned into ¼-acre pasture and gained to 634 pounds to July 6th. Then to ½-acre pasture, where he stayed until Oct. 16th, when he weighed 810 pounds. From that time to Dec. 14th ate 486 pounds of lucerne and 252 pounds of grain, yet made only six pounds of gain. Then sold for $26.80, or $6.82 above the cost of food.

Where Improvements Could Be Made.—We wish to call attention to the fact that each of the first three had about three weeks on rough food alone, when they lost flesh. No. 4 lost flesh very rapidly when turned out to get his living in pasture with older stock. Also, that we think the several hours a day in the yard while on barn rations made the gain very small for the amount of food given. By these two pieces of what we should call very poor management we think the possible profits were greatly reduced. All but No. 3 were very small calves, even for grade Jersey.

Of course, the cost of feed depends upon the local values, and 45 cents per 100 pounds was charged for new milk—perhaps enough, as much of it was during the first week, when it is not thought fit for table use; 15 cents per 100 for skim milk, $3.75 per ton for lucerne, $3 per ton for roots, $10 per ton for bran and shorts, and 50 cents per month for pasture; certainly we cannot buy at those prices; but, as neither can we buy baby beef at from 3¼ to 4 cents a pound, live weight, perhaps cheap prices on food are fair compared to cheap prices of meat.

The quality of the meat was excellent, and called the very best sold at the local market during the year. We think if the faults in feeding to which we have referred had not occurred, and there had been a little grain when on pasture, the gain might have been larger and the profits also larger. But perhaps the plan adopted was nearer that which is the usual custom of farmers in that section. The last six pounds gain on No. 4 cost $2.17, and it would have been better to have sold him two months earlier.

THE IRRIGATOR.

The Great Work on the Nile.

It will be well to turn for the moment from our local irrigation problems and enterprises to contemplate the great achievements of modern engineering on the very site of one of the oldest civilizations of the world. Consul-General Long of Cairo has furnished the State Department at Washington a very complete account of the work, giving full details. The following is his introductory outline which furnishes the popular information concerning the enterprise:

Of the many monuments of Egypt's past that line the banks of the Nile, none will be more enduring than the Assouan dam. This great work will be a memorial of the British sojourn in Egypt, and in boldness of design and thoroughness of execution will rank with anything that has ever been constructed in this land of Titanic achievements.

Present State of the Work.—All the low-level sluices have been practically completed. These will let the water through even when the Nile is low, and will be shut or opened, according as water is required. There are altogether 180 sluices and 150 low-level sluices. The lowest level water ever reaches at Assouan is 278.89 feet above the Mediterranean. By means of the dam, the water will be held up to 347.6 feet above the same level. The very lowest sluices are sixty-five in number, and they have been made recently. An idea of the immensity of the labor involved in their construction may be obtained from the fact that the foundation of the deep sluices goes 75 feet below the ordinary rock surface. Each sluice is fitted with steel gates, adjustable at will, so as to enable the water to go in and out. The foundation was the most difficult portion of the whole work; seven-eighths of it is now complete. One gap has been left to relieve the western channel, but all the foundations have been built in this gap. The most important work now in hand is the construction of the dam across the western channel, the last of the five deep channels of the river which cross the line of the dam and carry the supply of the Nile in winter and summer. Temporary dams for the work have already been constructed, and the excavations for the foundations are in progress. A temporary dam of earth has recently been made on the south of the west channel. Another temporary dam on the north will soon be made, and then the pumps will be set to work to get the intervening water out. All the foundation masonry will be in and should be above water before the beginning of the Nile flood this year. When this has been accomplished, the difficult part of constructing the great dam will be over.

A Great Canal.—Besides the vast labor immediately entailed by the dam, another great work directly connected therewith is being undertaken at the first cataract. As the dam will close the Nile to navigation, a canal of about 6540 feet in length is being constructed. There will be four locks, each 10.3 yards broad and 87.2 yards in length, the first gate to be about 21.8 yards behind the center of the dam and the others north of it. The recess for the first lock gate has just been started, and the work of construction is now actively in progress. The gates will be of steel. When shut, they will stand across the opening of the canal, and when open they will slide into a recess prepared for their reception in the western wall. The foundations for the second and third locks are similarly in progress. The east wall of the first lock and the west wall of the second have already been built to the height of something more

than 8.7 yards. The foundation of the first lock floor is at 98.1 yards level, the others being respectively at 97, 93 7 and 90.4 yards level. The canal will permit sailing vessels to pass all the year round; heretofore they could only get through the cataract during high Nile. The mail steamers and any stern-wheeler now on the Nile will also be enabled to pass. The cost of this canal will be approximately $1,250,000, and would require from $100,000 to $125,000 in lock dues per annum, if it is ever to be a paying investment. But there is very little prospect of any immediate increase in trade; in fact, the reverse is probably the case. Formerly, there was a fair amount of carrying trade from the north, bringing supplies to the armies in the Soudan, and seed and grain has also been brought from the countries now depopulated and ruined by the Mahdi's and Khalifa's followers. This commerce is now gone, and the only carrying trade of any importance in the future will be from the south to the north, as the southern districts become more cultivated. The area, in any event, must necessarily be limited. Although a great volume of trade passes Shellal now, the construction of a railway from Assouan to No. VI station is only a matter of time, and the trade from the north of the dam will consequently be limited to the district between Assouan and Wady-Halfa, which will not be tapped by the railway. The construction of this canal is, in fact, due to what may be styled "moral considerations." The Egyptian Government does not wish to bar the navigation of the oldest waterway in the world, and to cut off the villages between Shellal and the second cataract from all communication with the outer world; for when the canal is finished the line to Shellal will no longer be used. It is proposed when the dam is finished to transship goods by the canal to Halfa, at Assouan. At the present time about 150 native boats start from Shellal to Wady-Halfa every week.

Work To Be Done.—The two chief works that will be undertaken during the next five months are to get the west channel foundation in and to complete to their finished levels those parts of the dam whose foundations are already laid. In 1902 the work will be practically confined to finishing up. The great enterprise has gone too far for even a high Nile to hinder the completion of the dam.

No precise details can be given as to the cost of the work. The original estimate for the construction of the two reservoirs at Assouan and Assiout was $9,886,000. The excess over this estimate will be great, although it cannot be accurately gauged at present, owing to the greatly increased depths which had to be excavated before sufficiently sound granite on which to found the dam was reached. The whole work will be finished at least a year before the time specified in the contract, which was five years. This will save one low Nile, and this early completion of the dam will, therefore, be of great utility and benefit to Egypt. Such is the present status and condition of the work which will mark an epoch in Egyptian history.

A more curious jumble of the ancient and modern would be difficult to find than in this enterprise. The best mechanical appliances of the twentieth century are used amid the very quarries which furnished the materials for the colossal structures of the Pharaonic age. The rocks that are being quarried to-day bear the grooves and notches made by laborers who died thirty centuries ago.

HORTICULTURE.

Cherry Growing on the Sacramento River.

By E. A. Gammon, at the Courtland Farmers' Institute.

In treating this subject I will give only a few words on the propagation of the cherry.

Choice of Stock.—Whenever the standard tree is desired the Mazzard is the stock used. If the dwarf is wanted, then either the Morello or Mahaleb stock is used. Of all stocks used in this locality, the Morello has proven the most satisfactory. But to any one who thinks of going into the business of the propagation of the cherry on this Morello stock I would emphatically say no, for only about 5% of the nursery stock planted ever live to become bearing trees. I think, without question, there is no variety of fruit stock grown that is so hard to work as this Morello. If this is so, the question will naturally be asked, Why use it? The answer comes quickly: You get cherries in a commercial quantity about three years quicker than on the Mazzard; your trees are easier to handle, being only half as large as the standard tree, and are much heavier and more regular bearers. My advice to any one desiring trees on this stock is to purchase yearling trees from one who has been able to propagate a large number on this Morello root. George P. Runyon of Courtland has them in variety.

Soil.—A deep, well-drained, sandy loam is no doubt the ideal soil for this most delicious of fruits. I believe that about half of the die-back so commonly seen, especially in our river orchards, is due to improper drainage, causing the death of the little root hairs, through which the tree derives most of its nourishment. Too much water during the winter and too little during the summer, which is the general condition of poorly drained orchards, brings about this result. In planting a cherry orchard, avoid land having a heavy clay subsoil, as it is next to impossible for the rain to percolate through this; and, again, it is next to impossible for the ground water to rise to a point where it can be used by the tree. There is no tree grown demanding just the right condition as does the cherry—insisting on freedom from excessive soil moisture, and, on the other hand, demanding a sufficient supply.

Planting.—Regarding the number of trees to plant per acre, or, in other words, how far apart, the tree should be planted, I would say, never nearer than 24 (and better 30) feet. By planting at this distance, if the soil is properly tilled and fertilized and the trees carefully pruned and sprayed, the very best results will be realized as to quantity and quality.

Pruning.—We are now at the especial point in this paper to which I call your attention. It will, no doubt, appear absurd for me—a mere sprig in horticulture—to assert to you successful orchardists present that your methods are all wrong. Yet I believe I can safely say that the Sacramento river method of pruning—or, rather, non-pruning—is not only wrong but absolutely ridiculous. With all other varieties of trees you give a yearly pruning. The "old, old story" here is: Let the cherry alone; don't prune the cherry; pruning the cherry is injurious, and the less cutting done in the cherry orchard the better. I claim that the cherry should be trimmed yearly for the first four or five years, much the same as are the other deciduous fruit trees. But after this only an occasional thinning out of crowding branches is necessary. The Sacramento river method, however, is to allow the trees to reach as nearly as possible 30 or 40 feet in height, the trees bearing on their extreme tips, where it takes a man about a day to gather a box. Again, when spraying time comes, about 6 to 10 feet of the upper branches are never reached with the spraying solution. I am bold to assert that this practice is absolutely wrong, and that it is just as necessary to prune the cherry as it is to prune any other tree. The successful growers of the great cherry districts of Alameda, Santa Clara, Napa and Solano counties have proven this to be a fact. Instead of climbing about 10 feet to the first cherries, as is done here, the picker can sit on the ground in the noted Geiger orchard, near San Jose, and gather several boxes per tree. This seems to me nearer the right condition. So, I would say, prune your young cherry trees.

Picking.—The next phase of this question is when to pick. Many growers wait until the fruit is nearly black before picking, claiming they receive more for the black cherries than the red ones. This is true, as when black and red cherries are sold in the markets the black ones command the higher price. This leads the grower to believe he nets more by shipping only black ones. But I claim that the grower who keeps his cherries picked before they become black has more money to show for his labor at the end of the season. Why? Because each day the market drops in price, beginning at about $3 per box, and at the latter part of the season bringing only 40 to 50 cents. When this low price is reached the shipper of black or ripe cherries has the largest shipments on hand. The shipper of red cherries, on the contrary, has about finished, as he is through a week before this bedrock price is reached, the bulk of his crop being shipped while the price was good. Again, one can pick twice as many red ones, as only half the care in selection is necessary, the black ones being scattered here and there on the tree. Another reason is that should a rain come the ripe cherries are ruined, while the red ones are only damaged a little, if at all. Oftentimes the rain spoils more than half of the cherries that are nearly ripe. Another strong reason, in my opinion, is that should the market be dull on receipt of the fruit the red ones can be held several days, or reshipped to such outside markets as Los Angeles, Arizona, New Mexico, Washington or Oregon. Not so with ripe cherries; they must be consumed at once or spoil. Thus on market days the shipper of red cherries has decidedly the best of it.

Packages.—I would say that a cheap box is dear at any price. A neat, attractive, neatly branded package will always command attention, and whenever cherries come to market in a poor, cheap, dirty, knotty box the contents are judged by the exterior. The buyer always gives preference to the neat packages. In packing, many neglect properly filling the boxes. These boxes when opened present anything but a nice appearance, as the cherries have not filled the box by about an inch, the layers being broken and generally jagged in appearance. On the other hand, when the boxes have been filled extra full the layer is pressed out firmly against the cover, and when this box is opened the appearance is beautiful and attractive, the face of the fruit presenting a fine, even appearance, with the layers intact. At least 1 cent per pound more will be realized by packing in this way.

When packing for the local or San Francisco market only one layer is faced, but when shipping to distant points two tiers should be faced. This fact was presented to my mind quite forcibly some years ago in the following manner: We shipped some Royal Anne cherries to New York, and as they were rather small we received 5 cents box less for ours than did any other shipper of fruit in the same car. We faced the next shipment with two tiers, and for this shipment we received 35 cents per box more than did any grower having fruit sold that day. So, I would say, for long shipments always layer two tiers. Now, having brought you to tiers, I will leave the matter with you.

Mr. Gammon's bright essay was heard with much interest and some discussion followed. Mrs. Senator Johnston protested against marketing red rather than ripe cherries.

Mr. Runyon informed the writer afterwards that the failure to take on the Morello stock is very great with the Early Purple Guigne and the Royal Ann, though the Black Tartarian takes well. He advises "double working," first with the Tartarian and then the other kind on that; but that, of course, makes the trees cost more. He would hardly call a tree on the Morello stock a dwarf. It gets a good, fair size.

Spraying for the Canker Worm.

To the Editor:—I see some discussion of methods of spraying for canker worms in recent issues of the Pacific Rural Press, and, although it is perhaps too late to benefit anyone this season, I will give some of our experience with this pest, just concluded.

First, permit me to say that I have proven to my satisfaction that the ordinary 16-mesh moth trap will not stop enough moths from going up the trees to make any material difference in the crop of worms. In the beginning of December, 1899, all of our prune trees were "trapped" and the following April saw fully half the orchard (over 100 acres) eaten up with the worms, although we fought them the best we could with shovels and poles and molasses and tar.

Thinking that possibly the traps were defective, we examined all carefully in November, 1900, and made them as nearly perfect as possible. The present April saw fully as many worms hatched on the trees as last year. Having no faith in the usual precipitation of one pound of Paris green to 200 gallons of water, we proceeded to experiment, while forty men went at the worst parts of the orchard with shovels and poles. After using the "green" from two pounds to four pounds per 200 gallons, we finally settled on three pounds as the proper strength to do good work, and finally sprayed the whole orchard at that rate, and also put on the first dose on apples and pears without changing the mixture.

The result has been satisfactory, generally, although occasionally patches of trees still show live worms. We used a little lime with the "green" most of the time, but where no lime was used we can see no difference. H. G. Keesling.

Edenvale, April 28.

American Pomological Society.

We have just received from W. A. Taylor, secretary (55 Q. St., Washington, D. C.), an announcement of the twenty-seventh biennial session of the American Pomological Society to be held in Buffalo, New York, September 12 and 13, 1901. As Buffalo is close to the famous fruit districts of western New York, eastern Ontario, northwestern Pennsylvania and northern Ohio, it is anticipated that the local attendance will be large and that the opportunity to visit these interesting regions under favorable circumstances will be embraced by many of the members from a distance.

A programme covering subjects of general and vital interest to fruit growers and consumers throughout the country is being arranged, the details of which will be announced in due time.

As a better understanding of the relations of bee keeping to fruit growing it is believed to be important to both industries that the National Bee Keepers' Association has been invited by the executive committee to join in one of the sessions for a discussion of the various practical phases of that question. This invitation has been accepted, and a joint session on this subject will be held at some time during the meeting.

The facilities for the display of fruits entered in competition for Wilder medals will be excellent, as the exposition authorities have tendered space for the society fruit exhibits in the horticultural building of the exposition. Such exhibits will also be eligible to exposition awards. Members who have promising new fruits or fine collections of standard varieties which they desire to exhibit are therefore urged to plan to attend the meeting and to make the best possible showing of their products. Entry blanks for such exhibits will be forwarded by the secretary upon application. Those who may desire to retard the ripening of portions of their exhibits will find ample cold storage facilities available in the City of Buffalo.

Agricultural Review.

ALAMEDA.

BIG CATTLE DEAL. — Niles Herald, April 26: Fred Weigman and S. Poorman, of Alvarado, left Tuesday for Tucson, Arizona, to gather up and bring north a trainload of beef cattle, which the former bought recently. There are 850 head, costing about $25,000, which will make a special train of twenty-four cars. The freight will run over $3500 and two stops will be made enroute to water, rest and feed the animals.

BUTTE.

NEW OLIVE GROVE.—Oroville Register, April 25: S. B. Onyett is now engaged in Palermo in planting 800 olive trees for Mr. Louis Glass, of San Francisco. The trees are Missions, and a new and very large variety of Picholine olives. Mr. Glass is a firm believer in the great future of the olive in this part of the State.

CALAVERAS.

A FLOWER FREAK.—Calaveras Chronicle: Mokelumne hill is becoming a place of freaks and monstrosities. In our last issue we gave an account of a cat with two mouths, and this week Mrs. C. H. Wells presented us with a flower of a freakish nature. It was a French marigold which had gone to seed, and after the seed had arrived at maturity and was still on the original stem new stems grew from each grain of seed to a length of 3 or 4 inches and then bloomed. The twig shown us contained eight second growth flowers, each perfect in every detail. This is something for botanists to explain.

RATTLESNAKES AND TARANTULAS.—Calaveras Chronicle: While working on the grade near the Haley cottage at Railroad Flat recently Edward Congdon and Jim Haley dug out a rattlesnake and a tarantula. The snake was about 18 inches long and had six rattles. The rattler and the tarantula were both in the same hole. Both were dispatched to the happy hunting grounds. This makes the third snake for the season.

COLUSA.

FARM HOUSE CAT REARS FOUR RABBITS.—Colusa Sun: Mat E. Phillip's little son found four little jack rabbits, just born. He lifted them up tenderly, carried them to the house and gave them to an old cat that had one kitten, nearly two weeks old. He took them to the cat expecting she would make a meal of the little rabbits, but she eyed them a few minutes, purred a couple of times, as much as to say, "Well, those are the strangest kittens I ever saw, but I guess they are mine and I will be a mother to them." She commenced to lick them with her tongue, the way old mother cats carress their young kittens and in a very few minutes the little jacks were nursing. They have been with her several days now and are growing and thriving nicely.

CONTRA COSTA.

FINE ALMONDS. — Antioch Ledger, April 27: Chris Van Barm, who lives a short distance south of Antioch, exhibits several almond limbs of the I X L and Ne Plus Ultra variety. The limbs are full of nuts, healthy and in excellent condition. The Van Barm place and all the land surrounding it produces prolifically every year, and the drought and frost seem to have no effect. The yield of almonds this year in the section referred to will be immense.

GLENN.

ALKALI LAND AND BARLEY.—Willows Promoter: A prominent and close observing business man of Willows who recently made a tour of inspection through some of the grain growing districts of Glenn county states that, taking into consideration all the drawbacks of the season, the condition of the growing grain is better than he expected to find. He saw no reason why a large crop of hay should not be harvested this year. He called attention to a fact in connection with alkali land which should interest farmers having that character of soil. He had noticed for a great many seasons that when this alkali land is sown to barley a big crop of that grain, and of excellent quality, is invariably the result. He stated, further, that in his opinion our farmers should not attempt to raise wheat on this soil, but should always sow to barley, as he is convinced that such land is adapted only to that purpose.

KINGS.

GRAIN FOR THE TULARE LAKE.—Hanford Journal, April 23: J. W. Barbour was exhibiting in Hanford Monday a rice grain stalk, taken from his land down on the Barbour reclamation district, on the west shore of old Tulare lake. The grain is some 5 feet high, nicely headed and very healthy looking. He says there are thousands of acres just like it in the same locality. The grain was early sown and could be cut for hay in another week. He attributes the heavy production to irrigation, as there is a 60-foot ditch in the district and from it the lands were flooded this winter. To-morrow thirty men and 100 head of horses will be at work building a levee, which will reclaim the land from any danger of overflow in the future.

MONTEREY.

TO THE EDITOR:—The prospects for the grain and hay crop in the Prunedale section of the country are the best for several years. Although looking fine, a good shower would be very beneficial to all kinds of crops. The disastrous frosts, which did considerable damage in some localities, didn't seem to injure the fruit crops here to any extent. A large acreage of apples was planted here this last spring, Bellefleurs and Newtown Pippins being the favorites. Beet thinning is in progress now, but is not getting along as fast as could be wished owing to lack of help.—COR.

MERCED.

ABOUT HENS AND ROOSTERS.—Merced Star: Some persons who raise chickens may be interested in knowing how to control the sex of fowls. An expert says if you wish to raise a majority of female chickens use an old rooster, and if you want male chickens use a young rooster with old hens. This is a very sure rule. Ten hens are plenty in a flock with one rooster. Don't shake the eggs that you want to use for hatching.

KANGAROO RATS.—Merced Star: The kangaroo rats are reported to be very numerous around Volta and Los Banos, and are in many instances killing young chickens. They are a little larger than the ordinary rat and have a long, very thick tail.

RIVERSIDE.

HOLY LAND ORANGES COMPARED WITH NAVELS.—Riverside Enterprise: C. E. Rumsey brought into the Enterprise office an orange which he had received from Jaffa in the Holy Land. It was sent by Mr. Rumsey's brother-in-law, and, notwithstanding its very long journey, arrived in fairly good condition. The specimen was divided among the Enterprise staff for their judgment. Perhaps there was prejudice, but the unanimous verdict was that Jaffa's fruit suffers by comparison with the Riverside Washington Navel. It was possessed of a fragrance that suggested a rich flavor, but it did not stand the test of eating. A curious circumstance, which may have been but an accident, was that the orange was seedless, though it possessed none of the marks of the ordinary navel. It was of large size and had a skin thicker than that of a pomelo. Mr. Rumsey suggested, however, that probably the orange was overgrown and not a fair sample.

ATTACKED BY BEES WHILE DRIVING.—Riverside Enterprise: Mr. Lane of Highgrove had quite an experience a few days ago while driving with relatives near Blue mountain. A swarm of bees settled on them and the horse. All the people were more or less stung, but Mr. Lane was the greatest sufferer, his head and face being so badly stung as to require the attention of a physician.

SAN BENITO.

DEJECTED ORCHARDISTS. — Hollister Free Lance: We learn of a number of orchardists who intend to pull out their apricot trees. Mr. Nesbit, of the San Juan valley, is said to contemplate such a step, and Assessor McConnell announces that he will pull out 600 apricot trees and turn his attention to some other industry, probably poultry raising. We are of the opinion that many of our orchardists would be now away ahead had they devoted the same amount of time and money to poultry raising that they put on unremunerative orchards.

SANTA CLARA.

BIG HAY CROP.—San Jose Herald: Haying season is in full swing in the foothills country and the speculators and the commission men are busy estimating the crop and the prospects for the season. It is the general opinion that, as far as the Santa Clara valley is concerned, the yield is going to be almost a record breaker, but the reports from other parts of the coast country are not so encouraging. The quality of the crop is unexcelled, and the growers will probably "make money," as the saying goes. Hay promises favorable things this year. The reserve crop has been cleared out, owing to heavy shipments abroad for army transport purposes, and the prices promise to be stable for months to come.

FRUIT PROSPECTS NEAR GILROY.—Gilroy, April 26: The recent frosts have not killed the fruit in this vicinity, as was feared. Orchards in the neighborhood of Rucker and some few at old Gilroy have suffered, but, on the whole, the Gilroy valley has escaped with but slight damage.

CHINESE HOG TRUST.—San Jose Herald: And now it is a hog trust, a Chinese hog trust, for at the head of the enterprise is His Excellency, the Imperial Chinese Consul, Ho Yow of San Jose and San Francisco, and estwhile of Shanghai. The new trust does not aim to monopolize the whole pork industry. The intent is to simply put an iron hoop around all the meat that is required by the Chinese population of the State. Ho Yow is the heart and brains of the enterprise. It is his capital and his genius that is working out the pretentious trust and he hopes within a few weeks to levy tribute on all his countrymen about this bay that are prone to pork. Somewhere between Alviso and Disappointment Point he is going to locate an extensive slaughter house and curing establishment. Moreover, he is going to raise his own stock and for this purpose is negotiating for an extensive tract of land in that vicinity, with water front facilities to allow of shipments of the meat by steamer direct to the wharves of San Francisco. Ho Yow and his hog trust promise to become a big thing for the south end of the bay. The scheme involves the establishment of his own line of steamers to San Francisco and the raising of pigs on a larger scale than yet attempted on the coast. Altogether the execution of his plans involves an expenditure of over $100,000.

SANTA CRUZ.

NEW WAY OF GETTING RID OF SQUIRRELS.—Santa Cruz Sentinel: Wm. Leibbrandt, a farmer on the Soquel creek, tells us that he has found the secret of getting rid of ground squirrels. His plan is to take a newspaper, fold it around his arm, making a cylinder of three or four thicknesses of paper. This cylinder he runs into their hole. When they attempt to crawl through this paper roll they are terrified by the noise their feet make when they step into it, and dart down their hole. Thereafter they never appear on the surface of the earth.

FRUIT NOTES.—Watsonville Pajaronian, April 25: The outlook at present is very favorable for a heavy apple crop in Pajaro valley.——The late frosts reduced the early strawberry output several hundred chests, but the indications are at present more favorable, and it is expected that a large crop of berries will be produced this season.——Orchard buying for this season has commenced and a few sales have been made. The initial sale was of K. F. Redman's orchard, and the price is reported as an improvement on last year's figures.——Two-year orchard contracts seem to be in most favor with growers and packers. If this season should show a light yield, the packers having two-year contracts will have a chance to get the benefit of a better yield in the same orchards next year.——The contracts of the Earl Fruit Co. for the apple crops of stockholders of the Fruit Exchange have been in circulation this week. There is much discussion over them, and the merits of handling through the Exchange or through the Earl Co. are being freely discussed by orchardists. It is figured out by the latter that it will cost from 27½ to 30 cents per box of four-tier stock, exclusive of cost of picking and hauling to warehouse, to handle apples under the contracts offered. Included in this estimate are the costs of box, wrapping paper, grading, packing, marking boxes, loading on cars and commission on sales. A fair interest on the orchard investment, a return for taxes and cost of orchard cultivation, and the cost of picking, hauling and handling, will add considerably to the cost per box. There is also the waste and the percentage of five-tier stock to be considered. When all these items of expense are counted up, it will be seen that apples have got to bring up to prices of last year to leave a margin to successfully work on.

SHASTA.

DIDN'T READ THE PAPERS.—Red Bluff Cause: A wool buyer went among the growers of Paskenta and succeeded in swindling a number of them out of 2 or 3 cents a pound on their wool. He made his appearance there about the time the wool market opened in Red Bluff and informed the growers that fleeces were worth 11 cents. A number of clips were sold at that figure. Wool was then worth 13 cents. It is quite clear that the Paskenta wool growers "ain't got time to read the papers." They are the fellows, when they get to the city, that furnish business for the coroner by blowing out the gas.

SOLANO.

HILL ORCHARDS LOOKING WELL.—Vacaville Reporter: It is remarkable how thrifty some of the hill orchards look after several seasons during which we have had a lack of rain. Naturally one would think they suffer more than the valley ranches. It is not true, however. The underlying sandstone seems to hold the moisture and provide the trees with nourishment during the summer.

SONOMA.

CAPTURES EIGHT YOUNG COYOTES.—Santa Rosa Press-Democrat: John Offutt of Sonoma Mountain captured eight coyote whelps on Wednesday. Mr. Offutt saw the mother emerge from a big hole in the ground and opened up the hole for 20 feet before he came upon the youngsters. He will keep the whelps for a while and if he cannot sell them alive will kill them and claim the $40 bounty money which the county will allow for the pelts. On the ranch on which the youngsters were captured over 2000 sheep are grazing. The folds have suffered greatly from the coyotes the past winter.

IN THE VINEYARDS.—Sebastopol Times, April 24: Surveyor L. E. Ricksecker has traveled a good deal over the county the past few weeks and has inspected many vineyards. He has discovered that the frost did not damage the vines in the upland vineyards, but did considerable damage to the vines on bottom land. In his vineyard at Occidental only about half an acre of vines in the bottom land were hurt by the frost.

STANISLAUS.

FINE ALFALFA IN SAND SOIL.—Modesto Herald, April 25: C. N. Whitmore brought to town on Monday a bunch of alfalfa from the six-acre tract in the sand soil he sowed April 30th of last year. None of the bunch is under three feet in height, and some of the stalks reach five feet. The writer was out on the tract a month ago, when the alfalfa was knee deep, thick, clean and a luxuriant green—an ideal field. It demonstrates beyond all question that the sand soil will produce alfalfa abundantly.

INCREASING THE ACREAGE OF THOMPSON SEEDLESS RAISINS.—Modesto Herald: F. C. Chapman, the Los Angeles gentleman who purchased 240 acres at Westport to devote to the Thompson seedless raisin grape, has 200,000 cuttings rooting on the land, to be set out this winter, and wants from 160 to 640 acres more land. Pending the rooting of the cuttings, he is planting eighty acres to sweet potatoes and black-eyed beans and an acre to peanuts, all with a view to determining to what products the land between rows of vines may most profitably be cultivated while the vines are growing.

SUTTER.

ALFALFA KILLED.—Sutter Independent: The farmers and dairymen living along the Sacramento river between Knight's Landing and Kirksville have suffered great loss from the drowning of the greater part of their alfalfa. Many of them are now plowing up the ground for reseeding. The water from the tule and the Sacramento river flooded these fields rather late in the season. The flooding was followed by north winds and warm weather, which has worked the destruction of at least four-fifths of the alfalfa in that locality.

TEHAMA.

SUMMIT RANCH FRUIT ALL RIGHT.—Red Bluff News: Charles Cofer exhibited a number of branches from the fruit trees at the Summit ranch which show that the fruit was uninjured by the recent frost. The branches were all well filled with fruit. The apricots were nearly full grown, the cherries about half grown. The peaches and Kelsey plums were of small size.

WILL STAND ANOTHER WEEK'S SUNSHINE.—Red Bluff News, April 24: John Cozad, whose ranch is a couple of miles northwest of town, has begun haying. His neighbor, Gus Nelson, says he will wait till May 1st before he begins on his crop, as his stand of oats still looks fresh and as though it could stand a few days more of sunshine. It has reached an average hight of 2 feet and will make a very fair quality of hay.

TULARE.

A BIG CATCH OF FOXES. — Visalia Delta: About two weeks ago Louis Featherstone of Goshen saw some young foxes playing on a knoll in his father's wheat field. He informed the Leggett boys and in about an hours' time they captured seven of the animals. Since that time two other dens have been dug out. In all twenty-one foxes have been taken.

COMING PRUNE CROP.—Visalia Delta: Sam Hall has a prune orchard of thirty acres on Goshen avenue, and he thinks that his crop of prunes this season will be quite as heavy as that of last season. In fact, many of the trees will have to be propped up to keep them from being damaged by their heavy load of fruit.

PROSPEROUS PORTERVILLE.—Enterprise: Thirty acres to orange trees will be planted out north of here this month. Of these, E. E. Graham of Minneapolis will plant fifteen acres; H. Lucy of Washington, five acres; J. H. Graham of New London, Iowa, four acres; and D. W. Chamberlain, who now resides here and looks after the above places, six acres.

THE HOME CIRCLE.

My Queen.

Your eyes look at me all the day
And shine upon me in my dreams;
Your face, although so far away,
Upon me beams.

I see you as I saw you last;
I see you as when first we met.
The scenes of all our happy past
Are with me yet.

I press you to my heart once more,
The while my lips the words repeat,
Again, again, o'er and o'er,
"I love you, sweet."

I feel your arms about me twine,
I catch the incense of your breath;
I press your lips and know you mine
Through life and death.

Through life and unto eternity,
And all the happy years between,
I know you mine. Oh, come to me
And be my queen.

Your empire, it shall be a home.
A fireside, it shall be your throne.
There you, through all the years to come,
Shall rule alone.

The only law of that domain
Will be that each shall strive to bless;
The only wealth we seek to gain,
Our happiness.

Until, into each other blent,
Our love its highest fruitage bear,
And blessing, peace and sweet content
Shall be our share.

—J. A. Edgerton.

Barbara's Dream.

"I wish I could be somebody else, just for a change," said Barbara Wyatt, putting down her candle and giving one of her bronze slippers an impatient kick across the floor.

"What is the matter now, dear?" asked her sister, whose room she shared.

"It's that horrid dancing school! It gets worse and worse every time. None of the boys like to dance with me, and I can never think of anything to say to them when they do. Frances, you can't think how trying it is to be plain, and 5 feet 5 inches tall when you are only fourteen years old, and to have a thin wisp of hair, and a mother who doesn't approve of bangs. Oh, dear! I would like to change my face and my figure and my character and everything about me, especially my feet. I don't like to wear No. 5½ boots."

Frances was a little deaf. So Barbara shouted out her complaints in louder and louder tones, fairy screaming the last sentence.

"Why don't you wear sixes, then?" said her brother, who was passing outside the door.

"That is just like Geoffry; he never appreciates my trials. You do, you dear thing! You never preach, like mamma, nor laugh at me, like Geoffry, nor say, like papa, 'Be thankful, Barbara, that you have not lost one of your arms, like poor old Michael O'Brien.' It doesn't make it any easier for me to have thin, ugly arms because Machael has but one. What does he have to do with it, anyway? I'm not comparing myself with unfortunate people like that, but with happy ones. How I wish I were Evelyn Cox! When I see her dancing all evening with Arthur Kent, and he doesn't come near me—and I know I'm just as good as she, and a great deal brighter, only stupidly shy and hideously plain—then I think I would give anything in the world to have her graceful way and lovely fair hair and blue eyes. How she can look at one out of those eyes of hers! But, now, if I were to look like that—" Barbara tried it, and the result was so funny that her sister laughed heartily. Frances became serious in a minute, however.

"It is hard to be plain," she said. "There is no getting away from that fact. It is much nicer to be pretty, in spite of all the wise maxims. But those of us who don't have the best have to learn to adjust ourselves to circumstances and make the most of what we have. Nobody can teach us this; we have to struggle on until we find it out for ourselves."

Something in Frances' tone struck Barbara. It suddenly occurred to her that her charming sister was quite as plain as she; and, then, she was deaf, beside. Frances, however, was so delightful that no one minded these things in connection with her.

"I saw a funny sign on a queer little shop the other day when I was in Boston: 'Wanted, left-off teeth and second hand clothes. Articles swapped.' I should like to have gone in there and changed all my features and traits for those of somebody else."

Barbara had said this in a sleepy voice, for she had taken her place in bed by Frances' side. Presently she could not tell how it happened—she was walking past the "Exchange Office," and was surprised to find a new sign hanging there. "Characters, features and circumstances swapped," she read. She went eagerly in, and said to the rough man who tended the counter:

"I want light hair, please, and a small, slight figure. And—oh, yes, I especially want little feet. Two and a half or three, I think, will be the right number."

"We can't give you but two feet, Miss," interposed the clerk.

Barbara, who was always impatient of jokes unless she made them herself, paid no attention to this sally, but continued her list:

"I want the kind of blue eyes that look out under long lashes—so—without making me look like a fool, a lively manner, and the trick of saying foolish things so that they seem wise. I will keep my circumstances just as they are, only I should like some new dresses. I don't want to change my family at all, except my brother Geoffry. I—"

"Not so fast," said the man. "You can't fix things that way. You've got to make a clean swap, and be in somebody else's shoes for a while instead of your own."

"What a vulgar person!" thought Barbara. "And yet it will be pleasant to be literally in somebody else's shoes."

"Whom would you like to change with?" he asked.

"Evelyn Cox," she replied, promptly. "Only I don't like her last name, nor her cross sister Julia. They are always quarreling. Geoffry says they live like fighting cocks. That boy's puns get worse and worse every day. It will be good to have a rest from him. I can have Frances instead of Julia, of course?"

"Certainly not. You've got to go the whole figure, and take Evelyn's family along with her good looks."

Barbara hesitated. Mrs. Cox was a kindly but somewhat unrefined person, and Julia a peevish invalid; but, then, one would bear a great deal for the sake of being so pretty. Besides, there was Arthur Kent, who would be devoted to her if she were Evelyn. The thought of him turned the scale.

"We only swap characters for twenty-four hours at a time," said the clerk, "but if you like being Evelyn, I will put your name down for some more days."

The first thing that Barbara was conscious of, after the change was made, and she was sitting in the Cox's gaudy parlor, was a curious sense of limitation. The present had suddenly become tame and stupid, and there was nothing interestingly suggestive about the future. She had a stifled feeling, which made her hastily push up the window.

She looked across the undulating meadows to the distant river. This, surely, could not be the same view that gave her such keen pleasure at home! What was there to interest one in a cow pasture and a bit of water and a few trees? She picked up "Ivanhoe" and wondered how she ever could have been so excited over such a prosy book. What did she care how it ended?

She still had enough of her old self left dimly to realize that something had gone out of her life which had once given it all its zest; but perhaps it would be different when the evening came, for it was dancing school night.

By that time she had become so accustomed to being Evelyn Cox that she felt no surprise when she saw how unattractive Arthur Kent looked.

"Tiresome boy! I suppose he is going to stick to me like a burr, as usual," she thought.

"There is that poor Barbara Wyatt alone over in the corner," she observed to him, presently. "How horrid it must be to be a wall flower!"

"Perhaps I ought to dance the lancers with her," he said.

"Oh, never mind about her; she doesn't like to dance."

For although Arthur Kent was an ugly, awkward boy, it was pleasanter to talk to him than nobody, handsome Geoffry Wyatt being engrossed with Marian Grey.

A slight consciousness of her old self came to Barbara at this moment, and she was surprised to see how fascinating her brother looked when seen with Evelyn's eyes. "I wonder if we all want what we can't get?" she thought.

The evening had been a failure, there was no doubt about that; for Marian had danced even more than she, and, worst of all, Geoffry Wyatt had not been near her once.

"Oh, dear!" she sighed, "I wish I were Marian Grey. What's the use in having golden hair and blue eyes and the prettiest dress in the room if people would rather talk to a girl like her? Everybody likes her, in spite of her clothes, and she always has a good time everywhere.

"Well, I have mother and Frances to sympathize with me," she thought; "but, no, I haven't, either. I wonder whether Mrs. Cox—mother, I mean—and Julia will be up when I get back. I wish my sister went to dancing school with me, like Barbara Wyatt's, and that I had such a delightful brother. Oh, I'm getting all mixed up and forgetting who I am, anyway!"

She found Mrs. Cox awaiting her in the parlor.

"Well, Evelyn, for the land's sake, if you haven't torn your silk dress."

"I wish you wouldn't use such expressions, mother; Mrs. Wyatt doesn't," she said, crossly.

"Evelyn," called out Julia, "can't you make less noise coming upstairs? You've waked me up and I shan't sleep a wink all night."

"It was a failure," said Barbara, frankly, when she returned to the Exchange Office. "I would rather be myself than Evelyn, plain and awkward as I am. But I should like to be Marian Grey, she is so lovely to look at, and as sweet as can be. I am sure she is always happy, for she has everything to make her so; and she never looks discontented, like Evelyn."

"I will take down your application," said the man; "but you've got to be your sister Frances first. She came in just after you went out and asked to change with you. We takes 'em in their order."

"But I don't want to be Frances. I don't want to be twenty-three years old and deaf!"

"You've just got to try it," said the man. "It's a poor rule that don't work both ways; and, if you want to be other folks, you can't be surprised that other folks want to be you."

"No," admitted Barbara, "I suppose I can't."

Nevertheless, the idea of being Frances was appalling to her; for, although no one was so sympathetic and delightful as her sister, she had a hard time.

"I shall have to do all the family mending, and go to market, and I don't know anything about marketing. I once asked for a spring chicken in March, and, when it came, it was so tough we couldn't eat it. Geoffry called it 'the last hen of summer.' Speaking of Geoffry, I shall have to help him with his Latin, and I don't know half as much as he does. However, if I am Frances, I suppose I shall have her knowledge, too. But, worst of all, I shall have to fit my sister Barbara's dresses and keep her things in order, and she will interrupt me twenty times a day to tell me about her troubles, and I shall have to see that she does her practicing. Oh, my poor sister Frances, what a life that wretch leads you!"

When Barbara was enveloped in Frances' personality, she found to her surprise a sudden sense of expansion. The world seemed to have put on an added touch of loveliness; her favorite books had a deeper significance, so that she felt as if she were reading between the lines; and all the trials of her youth seemed so childish in the face of her new experience that she wondered how Frances could have borne with her so patiently in the old days. It was not that life had grown easier, but that she no longer minded its being hard; and the deafness to which she had looked forward with such dread seemed to be what had opened her mind to the new meaning she saw in everything. "It is that which makes me so sorry for anybody who has suffered in any way," she thought.

"Now I can be Marian Grey," said Barbara, when she had returned once more to the Exchange Office. "It is much nicer to be Frances than I expected; but Marian is just as lovely as she, and has an easier time."

"There is one more application before yours," returned the clerk. "It's from Michael O'Brien, the man with only one arm."

"Oh," said the girl, quickly, "I can't stand that; we must draw the line somewhere. I would rather never be Marian Grey if I have to be that man first. I would rather—"

"But you must try it," said the inexorable clerk.

"I can't! I can't! I can't!"

She ran out of the Exchange Office, and, looking back, she saw him in hot pursuit. He came nearer and nearer. He took her by the shoulder and gave her a rough shake. She screamed.

"Wake up, dear!" said her sister Frances; oh, I'm sorry I frightened you."

"I've had the strangest dream," said Barbara, rubbing her eyes and slowly coming to herself. "I'm so thankful I haven't got to be that one-armed man. Poor thing! I never felt half sorry enough for him before. But I should have liked to be Marian Grey! I never can get over it that I didn't have a chance to see how things look to her. However, as you said last night, Frances, those of us who don't have the best have just got to make the best of what we have."—Sunday Afternoon Series.

TEACHER—"Anything that is transparent may be easily seen through. Now, Emma, you may name something that is transparent."

Emma—"Any kind of key hole."—Fliegende Blatter.

DON'T GET THIN

get fat; get nice and plump; there is safety in plumpness.

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Old Hymns.

There's a lot of music in 'em—the hymns of long ago—
And when some gray-haired brother sings the ones I used to know,
I sorter want to take a hand. I think of days gone by—
"On Jordan's stormy banks I stand and cast a wistful eye."

There's a lot of music in 'em—those dear, sweet hymns of old—
With visions bright of land of light, and shining streets of gold;
And I hear 'em singing, singing, where mem'ry, dreaming, stands,
"From Greenland's icy mountains to India's coral strands."

An' so I love the old hymns, and when my time shall come,
Before the light has left me, and my singing lips are dumb,
If I can hear 'em sing them then I'll pass without a sigh
To "Canaan's fair and happy land, where my possessions lie."

—The Cooking Club.

An Amusing Indoor Game.

Write out as many conundrums with answers as you think desirable to occupy the time. This list will be for the umpire, who will be chosen before the beginning of the game. On separate slips write the answers of all the conundrums in the hands of the umpire. The game then proceeds as follows: The umpire will appoint two leaders, who will choose sides, the opposing sides taking seats opposite each other, or stand facing each other as in a spelling match, the parties chosen taking their places as they are called. The umpire then explains the game and the rules, after which he takes the slips containing the answers to the conundrums, one answer on a slip, and distributes them, taking care that they are well mixed, and giving each side an equal number of the answers. The umpire now takes his stand at the head of the opposing columns, and reads or asks the conundrums in the order in which they stand on his list. Having heard the conundrum read or asked, each one in the party consults his slip, and any who think they have the answer rise if the party is seated, or, if standing, take one step to the front and read the answer given on the slip. If only one replies, and the answer is correct, the umpire tallies five for the side to which the person answering belongs. If the answer is wrong, the umpire tallies three for the other side. If several have risen to answer, which is improbable, the correct answer counts five for the winning side, and for every other one who has risen, two points are deducted from the score to whichever side he belongs. If no answer is forthcoming after a moment's waiting, the umpire will read the answer himself and ascertain which side had the correct reply, and immediately award a tally of ten to the opposite side. The rules of the game permit no talking before the umpire has finished his list of questions. The ways for counting may be varied. It will be surprising to know how many will fail to answer a good conundrum with the correct reply in their hand. If the conundrums are good, the results are very amusing, and the score adds a zest to the game, which is a good one to "break the ice" for the evening.

A scientist now tells us that he has discovered that mice have a wonderful antipathy to peppermint oil, and that some of it placed around their haunts will successfully keep them away. There are a good many who are continually fighting these little pests, and the suggestion may be worth trying. There are many objections to the use of poisonous articles for the elimination of mice, and this discovery, if proven to be effectual, will, no doubt, be a boon to those who are troubled in this way.

The average height of the heavy rain cloud is 1680 yards; of the delicate, fleecy cirrus, 9700 yards.

DOMESTIC ECONOMY.

Hints to Housekeepers.

One way to care for fine laces is to keep them in envelopes of blue paper, sprinkling them with a little powdered magnesia before they are folded away.

A good use for the odds and ends of soap that accumulate on all toilet stands is to dry them out thoroughly by placing on clean tins in the warming oven, and then pounding them to a powder. Mixed with bran or oatmeal, and sewed into little cheesecloth bags, they are excellent to use for the bath.

Soup of almost any kind is better warmed over for the second day's dinner than when newly made. If the warming-over is done too quickly, the soup is likely to be scorched. If it is left upon the fire too long a time after it has become hot, it is likely to be insipid. With these two exceptions, soup is better on its second appearance than upon its first.

Irish moss lemonade is an esteemed drink for a patient with a feverish cold. Made according to a formula in a nurse's course, it requires a half cup of Irish moss, picked very carefully, and soaked in enough cold water to cover. Remove the moss, add two cups of cold water and cook twenty minutes in a double boiler. To half a cup of the liquid add the juice of one lemon, and sugar to sweeten.

Rice puddings are deserving of favor, but there seems to be little general information in circulation concerning the way to make them. A particularly delicious pudding is made by boiling a cupful of rice in a pint of sherry until tender; take off and let cool. Then heat into it the yolks of six eggs; add a little salt, possibly, and just a suspicion of nutmeg. Put into a deep dish, spread over it the beaten whites of the egg, and brown in the oven; serve cold.

Rice croquettes are extra good when made by these directions: To two cupfuls of cold boiled rice add one tablespoonful of cream, or if the cream is not at hand, one tablespoonful of butter. Add a little salt and one teaspoonful of sugar. Grate in a mere suggestion of nutmeg. Spread this mixture out in thin pieces, and fill each piece with some jam or jelly, folding it up in a croquette shape, the jelly inside. When all are ready, proceed as in the case of any kind of croquettes.

Cream cheese mixed with equal portions of minced chives and parsley, using, perhaps, two teaspoonfuls of each for one small cheese, then made into small balls and served with lettuce salad is very good. Or take one-half pound of a rich dairy cheese and work it to a cream with a tablespoonful of butter. Add a teaspoonful each of mustard, sugar and Worcestershire sauce. Dash in a little cayenne and add one and one-half tablespoonfuls of vinegar. Beat all together and serve on crackers that have been placed in the oven till crisp and hot.

Domestic Hints.

Curried Oysters.—Fry two or three slices of Spanish onion in plenty of butter for five minutes or so without letting the butter brown. Then take out the onion and stir in a little curry powder, or in the quantity you like. Add to this a half pint or so of good stock. Let this boil well, and then thicken with a little flour braided with butter. Season with salt and pepper to taste. Meanwhile have blanched in a little tomato sauce a pint of oysters, and over these pour the curry sauce. Pour over toast and serve.

Celery Soup.—This delicious soup, which has the further merit of being cheap and easily prepared, is enough for four people, and costs about ten cents: Take half a bunch of celery, using root and outer stalks, which are strongest in flavor. Boil these about three-quarters of an hour with a little chopped onion. When soft, press through a sieve, and add a pint of milk. When about to boil, add a tablespoonful of flour, and cook till it thickens, stirring all the time, and at the last add a tablespoonful of butter. Serve with croutons of bread or oysters crackers.

Orange Tapioca.—Soak two tablespoonfuls of pearl tapioca in two cups of water for an hour. Then place on the back of stove to simmer until clear. Add four tablespoonfuls sugar, boil up once and pour over four sliced oranges. Serve cold with whipped cream.

Poached Eggs with Creamed Salmon.—Stamp out five rounds of bread an inch thick; remove the centers, leaving a case with a narrow rim. Brush over the inside of the cases with melted butter, and brown delicately in the oven. Fill with cold boiled salmon flaked and heated in one cupful of cream sauce to one pint of the salmon. Place a poached egg above the salmon, dust with chopped parsley and garnish with slices of lemon; serve while hot.

Batterbread.—Scald one pint of fine white meal with three cups of very hot water; beat into this one cup and a half of cooked rice, one pint of buttermilk, one teaspoonful of salt and three well-beaten eggs. After this is thoroughly beaten put half a teaspoonful of soda in a cup of buttermilk, which must not be very sour, beat in the mixture very quickly and pour into a hot pan where a spoonful and a half of lard has been melted. Bake in a hot oven, and serve as soon as done, which will be in about twenty or thirty minutes. Serve with nice fresh butter.

Apple Tart Pie.—Grate about two cups of stale rye bread, mix it with a little sugar, cinnamon and grated lemon peel, butter a deep pie plate, which must be well greased, line it with the bread crumbs; cut up or chop very fine, five or six tart apples; mix these well with sugar, cinnamon, raisins or currants and a little citron cut up fine. Put the apples on the crumbs which have been seasoned, adding a little more sugar; now cover with the remaining crumbs; put flakes of butter on top, and sprinkle with a wineglassful of wine—either white or red. Bake about twenty minutes; serve with whipped cream.

Chapter I.—What is your name, little boy?" asked the teacher.

"Johnny Lemon," answered the boy.

And it was so recorded on the roll.

Chapter II.—"What is your name?" the high-school teacher inquired.

"John Dennis Lemon," replied the big boy.

Which was duly entered.

Chapter III.—"Your name, sir?" said the college dignitary.

"J. Dennison Lemon, responded the young man, who was about to enroll himself as a student.

Inscribed in accordance therewith.

Chapter IV.—"May I ask your name?" inquired the society editor of the "Daily Bread."

"Jean D'Ennice Le Mon," replied the swell personage in the opera-box.

And it was duly jotted down.

The End.

—Chicago Tribune.

"My daughter had a quiet wedding on account of her husband's recent bereavement."

"Has he lost a near relative?"

"Yes, his first wife has been dead only six months."—Chicago Record.

Peerless Prune Evaporator.

This principle has been demonstrated by thirty years of practical test to be superior to all other methods. Endorsed by the leading scientific men of the United States as the correct principle, and proven in actual test to give the highest per cent of cured fruit. A perfect machine in every respect; burns wood or coal; simple, cheap and durable Maximum quality and quantity at minimum cost. No shifting of heat or trays; no machinery. Cures all kinds of fruit and vegetables. Fruit dries evenly on the trays and trays dry evenly in the machine; no sorting of fruit. A tower machine, every tower a separate evaporator, making it possible to dry several different varieties at one time or run all towers or part as quantity of fruit demands. The tower machine has driven competitors from the field in the Northwest. For catalogues, testimonials and full information, apply to

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Directions for planting seed if desired. WRITE FOR PRICES.
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Thompson Seedless, Muscat, and Muscatel Grapes. The Zante Currant and the Sultana, Rooted Vines.
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HAVE A HALF MILLION FOR SALE.
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Bedding and Flowering Plants of all kinds now ready for transplanting.
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This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 1, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being por bushel:

	May.	July.
Wednesday	71⅜@72¾	71⅞@73½
Thursday	71⅞@73	72¼@73¼
Friday	72¾@73⅜	73⅜@73⅝
Saturday	73¼@74½	73¾@74⅞
Monday	74 @72¾	75 @73⅝
Tuesday	71¾@72⅝	72½@73½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday	5s 9⅝d	5s 10⅝d
Thursday	5s 10 d	5s 10⅝d
Friday	5s 10⅝d	5s 11¼d
Saturday	5s 11 d	5s 11⅝d
Monday	5s 11 d	5s 11½d
Tuesday	5s 9⅝d	5s 10¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 02½@1 02⅜	1 08 @1 07½
Friday	1 03½@1 03	1 09¼@1 08½
Saturday	1 03½@1 04¼	1 09 @1 09¾
Monday	99¼@1 00	1 05 @1 06
Tuesday	99½@1 00¼	1 04⅜@1 05½
Wednesday	——@——	1 05¾@1 05

WHEAT.

The whoat market is easier, and most of the grain growers in this State can well afford to have it so on account of the great bonefit derived from the rain during the week. A storm was never more acceptable, and there was probably never a rain in this section that did more good. The benefits from the downpour to northern and central California are hardly measurablo in dollars and cents. The California farmor certainly does not have everything his own way, but, as regards crop conditions, the grain growers in a large area of the State are more favored than those of many other sections, not only in foreign lands, but also in the United States. It is reported that a large portion of this year's crop in Texas will prove a total loss. In the Oklahoma soction, on account of insect pests and other drawbacks, not over half a yield is expected this season. In the local market not much trading was done in spot wheat, but to have effected free sales, naturally the acceptance of lower prices than lately current would have been necessary. Trading in speculative market was tolerably livoly at reduced figures. It is said that 27,000 tons of wheat are piled up in Call Board warehouses against May contracts. Less than 40,000 tons would load all the grain tonnage now in port, engaged and disengaged. The United States visible supply east of the Rockies is given at 48,355,000 bushels, showing a decrease for the week of 1,513,000 bushels. Market closed quiet, but fairly steady, at the revised quotations, with foreign demand slow.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, $1.04⅛@99⅛c.

December, 1901, delivery, $1.09¾@1.04⅜.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at —— @ ——; December, 1901, $1.05¾ @1.05.

California Milling	$1 02½@1 07½
Cal. No. 1 shipping, alongside	1 00 @1 02½
Oregon Valley	1 02½@——
Washington Blue Stem	1 02½@1 07½
Washington Club	1 00 @1 05
Off qualities wheat	97½@1 01¼

Ocean freights and prices for wheat, as compared with a year ago, aro as follows:

	1899-1900.	1900-01.
Liv. quotations	6s4d@6s4½d	6s0d@6s0½d
Freight rates	40@——s	32½@35s
Local market	$0 93¾@ 97½	$0 98¾@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

The local combine marked up the price of flour 15c. per barrel on Friday last, just before the rain, and when there was no assurance of moisture. Very little or no business has been done at the advance, and there is little probability of the higher figures being long maintained. Prices were marked up on account of dry weather conditions, now a thing of the past.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

The market for this cereal has been governed largely the past month by weather conditions, so far as feed descriptions were concerned. Values for choice feed wero prior to the rain almost as high as for brewing barley. On the latter there was no competition worth mentioning among buyers, the local brewery combine resisting any advance, while foreign and Eastern markets did not permit of shippers paying any improvement on figures which had been current for several months. Values for brewing grades have not changed materially since the rain, but are lower for feed qualities. A part cargo of brewing barley—1700 tons valued at $31,000—went afloat the current week, dostined for the United Kingdom. On the Call Board market there were decided declines for both May and December options.

Feed, No. 1 to choice	80 @ 82½
Feed, fair to good	77½@ 80
Brewing, No. 1 to choice	82½@ 85
Chevalier, No. 1 to choice	——@——
Chevalier, No. 2	——@——
Chevalier, poor	——@——

OATS.

Stocks of this cereal continue of light volumo, and there can be little change in this regard until new crop comes upon the market, which will be nearly ninety days hence. The market is unfavorable to buyers, but the movement is very slow at current asking figures. Most, if not all, the oats for Government use have been lately coming from the East.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 35 @1 42½
White, poor to fair	1 25 @1 32½
Gray, common to choice	1 30 @1 42½
Milling	1 42½@1 50
Surprise, good to choice	1 45 @1 52½
Black Russian	1 12½@1 30
Red	1 30 @1 45

CORN.

There are very slim supplies in this center and they are almost wholly in second hands, being mainly Eastern product owned by millers and jobbers, and representing purchases made prior arrival. It has been impossible lately to lay Eastern corn down here under $1.25 sacked, or $1.20 in bulk in carload lots.

Large White, good to choice	1 25 @1 30
Large Yellow	1 25 @1 30
Small Yellow	1 55 @——
Eastern, in bulk (carload lots)	1 20 @——

RYE.

There is more offering than can just now be disposed of to advantage, the immediate positive demand being insignificant.

Good to choice. new	80 @ 82½

BUCKWHEAT.

None coming forward at present, and there is no special inquiry. Values remain nominally as last noted.

Good to choice	1 85 @2 00

BEANS.

The general tone of the market has been a little easier than for some weeks preceding, but there has been no marked changes in asking rates. Stocks of all white beans and Limas are decidedly light, and must continue so during the Summer. There may be a very fair yield of white beans, but as to the coming crop of Limas there is still much uncertainty, with prospects by no means brilliant. Markot for colored beans is quiet, and for Pinks and Bayos inclines in favor of buyers, immediate offerings being largely of these two varieties.

Pea, fair to good, 100 lbs	4 75 @5 00
Small White, good to choice	4 75 @4 90
Lady Washington	4 00 @4 15
Butter	4 25 @4 50
Pinks	1 70 @1 90
Bayos, good to choice	2 40 @2 65
Reds	3 00 @3 25
Red Kidney	4 25 @4 50
Limas, good to choice	6 25 @6 40
Black-eye Beans	2 75 @3 00
Horse Beans	1 25 @1 50
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

In the way of transfers of dried peas from first hands there is practically nothing doing, and very little business in a jobbing way. Quotable values are without chango.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

There is considerable purchasing, both here and in the interior, mainly of the better class of Spring wools, such as are light and bright receiving the decided preference. Values are without quotable improvement, but for good to choice Spring fleeces the market is firm at the ruling figures. While there is scarcely anything doing in heavy and defective fleecos, buyers can be found to take hold of these if prices are made to their suiting.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

There are not enough hops offering to admit of wholesale trading. Stocks are not only light, but are almost wholly in the hands of jobbers or brewers. Aside from contracting, there will be little chance for business during the next few months. On new to arrive the quotable range is 10@13c., as to section and reputation.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

The market for hay has inclined less in favor of sellers than prior to last review, owing to the rain in the meantime. There has been no material break in values, however, nor is there likely to be for best qualities. Some hay outstanding is reported seriously damaged by this week's storm. New hay has already arrived in small quantity, principally Alfalfa and Barley.

Wheat	8 00@13 00
Wheat and Oat	8 00@11 50
Oat	7 00@11 00
Barley	6 00@ 9 50
Volunteer	4 50@ 7 00
Alfalfa	7 00@ 9 00
Stock	4 50@ 7 00
Compressed	8 00@12 50
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

While market for Bran and other mill offal did not show much activity, values wore tolerably well sustained, owing to rather limited supplies. Quotations remained much the same as preceding week. Rolled Barley is lower, with market weak at the reduced figures quoted. Milled Corn continues to be very firmly held.

Bran, ₱ ton	16 00@17 00
Middlings	17 50@19 00
Shorts, Oregon	16 50@17 50
Barley, Rolled	17 00@17 50
Cornmeal	26 50@27 00
Cracked Corn	27 50@28 00

SEEDS.

Little doing in the line of seeds quoted herewith. Alfalfa seed is moving in a small way, but the season for same is practically ended and there is not much stock left to draw upon. Mustard is too scarce to quote. The light jobbing trade in bird seod is at practically unchanged values.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag market shows a little better tone since the rain, but at the same time is not particularly firm. A sale of 100,000 Calcuttas was recorded on Call Board at $6.80, buyer June-July delivery. In other bags there is scarcely anything doing at the moment, and no appreciable changes in asking figures.

Calcutta Grain Bags, buyer June-July	6⅞@ 7
Calcutta Grain Bags, spot	6¾@ 6⅞
San Francisco Grain Bags, 22x36, spot	6⅝@ 6¾
State Prison Bags in lots of 2000, ₱ 100.5	65 @—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

The local market for Hides and Pelts remains in the same groove as for weeks past, being quiet at the rates quoted. Demand for Tallow is sufficient to absorb all offerings at steady values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½	8
Medium Steers, 48 to 56 lbs	8½	7
Light Steers, under 48 lbs	8	6½
Heavy Cow Hides, over 50 lbs	8½	7
Light Cow Hides, under 50 lbs	8	6½
Wet Salted Kip	9	7
Wet Salted Veal	9	7
Wet Salted Calf	9½@10	8½@ 9
Dry Hides	15½@—	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	70	@ 90
Pelts, medium, ₱ skin	50	@ 65
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3	@ 3¼
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

The market inclines in favor of buyers, with considerable honey offering, spot and to arrive, and the inquiry not very active. There is some of last year's honey still in stock, one jobbing firm being reported as having about three carloads, including comb and extracted.

Extracted, White Liquid	5 @ 6
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
White Comb, 1 lb frames	11 @12
Amber Comb	8 @10
Dark Comb	6 @ 7

BEESWAX.

Spot stocks are of light proportions, but increasod supplies are looked for at an early day. The limited business doing is at figures warranting no changes in quotable rates.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Market for Beef has not changed materially since last review, being fairly steady at the figures quoted. Veal is not lacking for custom at prevailing values, offerings being rather light. Mutton and Lamb are in fair supply, causing the market to present an easy tone, but prices ruled tolerably close to those of preceding week. The tendency on Hogs was to slightly lower rates, due more to very limited inquiry at current values than to any particularly noteworthy increase in arrivals. There are some Eastern hogs coming, prices East being on the decline.

Beef, first quality, dressed, net ₱ lb	7¼@ 7¾
Beef, second quality	7¼@ 7½
Beef, third quality	6½@ 7
Mutton—ewes, 7@7½c; wethers	7 @ 8
Hogs, hard grain fed, medium	6¾@ 6½
Hogs, small, fat	6¾@ 6½
Hogs, large, hard	5¾@ 6
Hogs, feeders	—@—
Hogs, country dressed	8 @—
Veal, small, ₱ lb	8 @ 9
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	8½@ 9

POULTRY.

There was no scarcity of common old fowls, and market for this class of poultry was about as favorable to buyers as preceding week. Full-grown Young Roosters, free from spurs, and Fryers in first-class condition were in demand at comparatively stiff figures, with limited offerings. Turkeys did not receive much attention. Ducks and Geese were not in large receipt, but sold at slightly reduced prices. Pigeons were in slow requost and market inclined against sellers.

Turkeys. live hens, ₱ lb	12 @ 13
Turkeys, live gobblers, ₱ lb	9 @ 10
Hens, California, ₱ dozen	4 00 @5 00
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	7 00 @8 00
Fryers	5 00 @6 00
Broilers, large	4 00 @4 50
Broilers, small	2 25 @2 75
Ducks, old, ₱ dozen	3 50 @4 50
Ducks, young, ₱ dozen	4 50 @5 50
Geese, ₱ pair	1 25 @1 50
Goslings, ₱ pair	2 25 @2 50
Pigeons, old, ₱ dozen	1 75 @——
Pigeons, young	2 00 @2 50

BUTTER.

Arrivals are of fairly liberal proportions. For the ordinary run of creamery product the market lacks firmness, but special brands in high favor with the trade are bringing comparatively stiff figures and above quotable rates, due to keen competition among jobbers to secure such stock. Dairy butter ruled steady, desirable qualities being in good request for packing and storing.

Creamery, extras, ₱ lb	17 @17½
Creamery, firsts	16 @16½
Creamery, seconds	— @—
Dairy, select	16 @16½
Dairy, firsts	15½@16
Dairy, seconds	— @—
Dairy, soft and weedy	— @—
Mixed store	12 @12½
Creamery in tubs	17 @—
Pickled Roll	17 @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

An easier market for flats is noted, receivers being anxious to prevent accumulations, and to this end are making concessions to buyers rather than miss sales. Young Americas are quotably unchanged, but movement in thom is light.

California, fancy flat, new	9½@—
California, good to choice	9 @ 9½

California, fair to good	8½@ 9
California Cheddar	— @—
California, "Young Americas"	9½@10½

EGGS.

Values have ruled steady and are still at a narrow range, but a greater difference in prices is looked for in the near future. Some favorite marks are bringing above quotations. Eastern eggs are arriving, but are going into cold storage, being too high for the immediate market.

California, select, large, wbite and fresb.	16 @17
California, select, irregular color & size.	15 @15½
California, good to choice store	14 @14½
Eastern, as to section and grading	— @—

VEGETABLES.

Receipts of most kinds of vegetables now in season were rather light, the wet weather part of the week interfering with forwarding, and prices as a rule averaged higher than previous week. Asparagus and Peas brought improved figures. Onion market continued to be rather lightly stocked with old Yellow, and offerings of new Red were not especially heavy, although on the increase. Main receipts of old Onions were 1489 crates from Australia per Tuesday's steamer. Tomatoes were on market from Texas and Mexico.

Asparagus, ℔ box	1 00 @2 00
Beans, String, ℔ lb	6 @ 10
Beans, Wax, ℔ lb	8 @ 9
Cabbage, choice garden, ℔ 100 lbs	75 @1 00
Cauliflower, ℔ dozen	50 @ —
Cucumbers, ℔ doz	50 @ 65
Egg Plant, ℔ lb	—@—
Garlic, ℔ lb	10 @ 15
Onions, Yellow Danver, ℔ cental	3 25 @3 75
Onions, Australian, ℔ cental	3 50 @4 00
Onions, New Cal. Red, ℔ cental	1 75 @2 25
Peas, Sweet garden, ℔ lb	2 @ 3
Peas, good to choice, ℔ sack	1 25 @2 00
Peppers, Green Chile, ℔ lb	10 @ 20
Rhuharb, ℔ box	75 @1 00
Rhuharb, Mammoth, ℔ box	1 25 @1 50
Squasb Summer, ℔ box	1 25 @1 50
Squash and Pumpkin, ℔ ton	—@—
Tomatoes, ℔ box	1 25 @2 00

POTATOES.

Market has ruled very firm since last review for old potatoes, desirable for table use, offerings being light and hardly equal to the demand. Burbank Seedlings were most sought after, and there was difficulty in securing them in wholesale quantity, either in Oregon or in this State. New potatoes were in moderate receipt, but more than arrived could have been readily and advantageously placed. Seed potatoes received very little attention, except where they could be made to serve for table use. Sweets were in fair supply and in very limited demand.

Burbanks, River, ℔ cental	85 @1 25
Burbanks, Petaluma-Tomales, ℔ ctl.	1 00 @1 30
Burbanks, Oregon, lb cental	1 30 @1 65
Early Rose	—@—
Garnet Cbile, ℔ cental	—@—
Peerless, ℔ cental	—@—
New Potatoes, ℔ cental	2 00 @3 00
Sweet Potatoes, Yellow, ℔ cental	60 @ 75

The Fruit Market.

FRESH FRUITS.

Blackberries put in an appearance this week from Covina and brought in a small way $3.50 per 15-basket crate. Cherries did not arrive as freely as expected, the rainy weather not only interfering with forwarding but doing considerable damage to the crop. Prices were at a wide range, in consequence of the marked difference in quality of offerings. Strawberries averaged higher than previous week, with arrivals lighter. Cold storage Apples are still on market and are moving slowly at rates quoted.

Apples, fancy, 4-tier box	1 75@ 2 25
Apples, good to cboice, ℔ 50-lb box	1 00@ 1 50
Apples, common to fair, ℔ 50-lb box	—@ —
Cherries, Black, ℔ box	1 00@ 1 75
Cberries, White, ℔ box	50@ 1 25
Strawberries, Longwortb, ℔ cbest	12 00@15 00
Strawberries, Large, ℔ cbest	10 00@12 00

DRIED FRUITS.

The market for cured and evaporated fruits has been in the main quiet since date of last review. The recent damage to coming crop and prospects of a very light yield have caused a firmer tone to prevail and generally stiffer figures to be asked by most holders, but it has been the exception where any appreciable improvement has been established in quotable rates, buyers in most instances refusing to operate at any material advance on the figures which have been lately current. Apricots have inclined more against buyers than any other variety, it being generally conceded that this year's yield of this fruit will be quite light, probably not over a third of a crop, as compared with last season. Stocks of Evaporated Apples have been reduced to very small volume in this center, causing the market to rule quite firm in tone, although not quotably higher than last noted. Free purchases are not possible, however, at current figures. Peaches are being quite steadily held, and bid fair to rule less favorable to buyers than at present before the season closes. Stocks of Figs have been lately materially reduced, especially of ordinary Black, market for latter showing more firmness. The Prune market is quotably higher, but sales at the revised figures, or on the basis of 3c. for the 4 sizes, are not possible to any noteworthy extent. The actual business consummated the past week has been at practically unchanged rates, or on the 2c. basis for the 4 sizes. The heavy transfers of Prunes on the last day the cut was officially in force is reported to have been in the interest of packers and engineered by them for their own benefit. They took a large quantity of Prunes so as to bring the total of sales up to 60 per cent of entire holdings, which per terms of agreement originally entered into, entitles them to a bonus of $35,000. This was the plum they were after, and confined their final purchases to the smallest prunes obtainable, so as to have the outlay of coin as light as possible. If the packers only come out even on their prunes, selling these last holdings on a 2c. basis, they will be still $35,000 ahead on account of the bonus.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6 @ 6½
Apricots, Royal, choice, in sacks, ℔ lb	7 @ 7½
Apricots, Royal, fancy	—@—
Apricots, Moorpark	9 @10
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	3 @ 4
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, cboice	4 @ 4½
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, balved, fancy.	5 @ 6
Pears, balved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, Wbite and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	4 @ 5
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	2 @ 3
Figs, Wbite	2½@ 3½
Peacbes, unpeeled	3 @ 5
Pears, prime halves	2 @ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 50-60s, 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less tban for District No. 3.

RAISINS.

There is a moderate movement in seeded raisins at the recent fractional advance established in values for same, but beyond this, trade is of a very light order. Jobbers are fairly stocked with raisins, and in some instances have reduced jobbing prices, with a view to having stocks move more freely. Official card rates of the Growers' Association continue as last noted.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½

(Above prices for loose raisins are for 50-lb boxes.)

Seeded Raisins, 1-lb packages, ℔ lb	5¼@—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleacbed fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleacbed 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; cboice, 9½c; standard, 8¾c; prime, 8c. Unbleacbed. 7@8c.

CITRUS FRUITS.

Orange market was quite well stocked, especially with other than most select, and only for best fruit showed any firmness, but quotable range of prices was without special change. Lemons were offered at much the same figures as last quoted, with fair demand for choice to select. Limes were in fair supply and market was favorable to buyers.

Oranges—Navel, ℔ box	1 25@2 25
Seedlings, ℔ box	75@1 25
Tangerines, ℔ box	85@1 25
Grape Fruit, ℔ box	75@1 50
Lemons—California, select, ℔ box	2 00@2 25
California, good to choice	1 50@1 75
California, common to fair	75@1 25
Limes—Mexican, ℔ box	4 50@5 00
California, small box	—@—

NUTS.

Almonds are being very firmly held, owing to poor crop prospects. Walnuts are virtually out of market. Peanuts are ruling steady, with fair demand at current rates.

California Almonds, sbelled	18 @22
California Almonds, paper shell, ℔ lb	12 @14
California Almonds, soft sbell	10 @12
California Almonds, hard shell	6 @ 7
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, band-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

The market has shown the same general condition as noted a week ago. There is little or nothing doing in the way of transfers from first hands, as there are few growers now carrying wine in quantity worth mentioning, or sufficient to admit of wholesale trading. Quotable values for last year's dry wines are nominally 22 @25c. per gallon, as to quality and section. It is now a well assured fact that this year's grapes and wine will bring good prices. This promised to be the case with a full crop, but, unfortunately, the yield this season will not be heavy. Monday's Panama steamer carried 4275 gallons and 76 cases wine, principally for Central America.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	160,249	5,446,761	5,377,233
Wbeat, centals	26,817	6,888,662	5,789,914
Barley, centals	29,090	3,364 072	4,691,501
Oats, centals	2,660	588,090	706,249
Corn, centals	3,065	97,299	121,046
Rye, centals	490	110,972	95,232
Beans, sacks	1,084	532,656	348,797
Potatoes, sacks	22,242	1,378,776	1,091,173
Onions, sacks	618	157,019	141,879
Hay, tons	2,682	141,515	135,726
Wool, bales	5 322	41,132	47,486
Hops, bales	54	8,234	9,868

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	57,588	3,127,414	3,652,306
Wheat, centals	...	6,589,029	5,174,876
Barley, centals	50	1,917,421	3,708,048
Oats, centals	...	48,433	43,006
Corn, centals	...	3,172	17,583
Beans, sacks	25	12,769	24,232
Hay, bales	40	85,700	125,152
Wool, pounds	390,187	1 031,218	4,324,433
Hops, pounds	557	540,076	1,005,235
Honey, cases	...	1,758	3,483
Potatoes, pack's	220	128,551	68,230

California Dried Fruit at New York.

NEW YORK, May 1.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Prune market weak, in anticipation of beavy arrivals of cut rate stock. Other dried fruits quiet.

Prunes, 3¼@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.

The Paint for sulphur smoke

P & B Paint is proof against the action of fumes and vapors. It is especially valuable for painting railroad bridges, roofs and all iron work exposed to sulphur smoke, steam, gases, heat cold and moisture. It is the only paint made to withstand all the elements without cracking, running or scaling off. Easy to apply; needs no mixing, stirring or heating.

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The P & B Paint, as used by me at these works, has proved very effective in every particular, so much so that in many instances I have abandoned the use of ordinary oil paint. For painting iron roofs I consider it quite invaluable, as its application frequently stops any oxidization of the iron, which, at this place, takes place very rapidly, even if the best oil paint is used, on account of the heavy acid fumes constantly rolling over the buildings, which permeate and gradually destroy anything they come in contact with.

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To raise good fruit you must have Potash. Fertilizers containing at least 8 to 10% of Potash will give best results on fruits of all kinds.

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They are sent free.

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Fruit Cutting and Pitting Machine

Is Practical in All Its Workings.

It cuts the fruit entirely round and pits it more carefully than it can be done by band. Tbe work is done with wonderful rapidity, six pits heing extracted at each revolution of the wheel, wbether the fruit he large freestone peacbes, or plums of the smallest size. It is capable of bandling

One Ton of Apricots Per Hour.

Thousands of tons of apricots have been satisfactorily cut and pitted witb tbese machines.

It Does Not Push the Pit Through the Fruit,

but holds tbe pit firm wbile tbe fruit is carefully removed without heing bruised—the pits are delivered separate from the fruit.

The Advantage of This Machine is Very Apparent,

as one macbine and one man practically represent fifteen or eighteen cutters. This perfect macbine, whicb is guaranteed, is the result of ten years experimenting and improving. Tbese machines will be rented for tbe fruit season for $50 eacb; for sale at $150 f. o. b. Los Angeles. If it is not satisfactory after two days' trial it can he returned and the money refunded. Address

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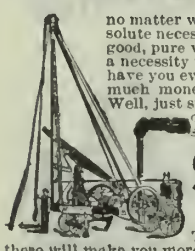
Other agents will try and draw comparisons between their new machines and our old ones but don't let them. Have a trial of a "Tubular" Dairy Separator, they are double the money's worth. Free book "Business Dairying" and catalogue No. 131

Sharples Co., Chicago, Ills. P. M. Sharples, West Chester, Pa.

To Build a Home,



no matter where located, the first absolute necessity is an ample supply of good, pure water. Water then being a necessity to both men and animals; have you ever stopped to consider how much money there is in that idea? Well, just stop long enough to figure on it for a moment, then send for a catalogue of our

STAR Drilling Machines.

The investment in one of these will make you more money than you can possibly make in any other way with the same expenditure. Think it over and write us.

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BULL-STRONG! ....PIG-TIGHT....

An Illinois farmer said that after harvest he had fully 200 bushels of loose oats on the ground that he could not secure any benefit from, because the fence around the field would not turn hogs. Figure the loss for yourself. He also said, all this would have been saved if he had used the Kitselman Woven Wire **Coiled Spring Fence**, and the value would have gone a long ways towards paying cost of the fence.

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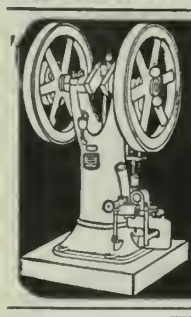

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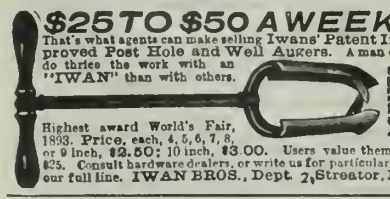

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Elgin Watches sold by jewelers everywhere in various styles. Prices to suit. Send for various sizes and free booklet. Elgin National Watch Co., Elgin, Ill.

FRUIT MARKETING.

A Prune Programme.

To the Editor:—I am clearly of opinion that the Cured Fruit Association can never be a permanent success, and to explain the reason for my belief is the object of this letter.

The law of supply and demand controls the prices of all commodities, and unless the prune combine controls either the supply or the demand for prunes, it cannot fix and maintain the prices of this commodity. Now, it controls neither one nor the other, and, therefore, the object for which it was formed, namely, the fixing and maintaining of the prices of prunes, cannot be attained. It has no influence over the magnitude of the crop; it has no influence over the demand. Of course, if all the growers had joined it, and if the directors were able to determine the exact relative value of prunes compared with other dried fruits, then there would be a greater probability of success.

A trust is one thing and an association is quite another thing. A trust is a success because the persons composing the trust give up the management of their affairs entirely to the trust, and there is but one management and one mind managing the business; but in the prune combine, with its 3800 members, each one managing his own affairs, and merely pledged by contract to deliver his prunes to the Association, the matter is very different. The Association has to compete, firstly, with those who have refused to join it, and then with a number of its own members, who, for some reason, decline to fulfil their contract. All these persons will and are able to undersell the combine, because they have no management expenses to defray, and, as long as any portion of their fruit is unsold, the cause of the Association is hopeless. Now, as for the immediate future, we must expect a surplus year by year; so we must expect this surplus to be carried by the Association, and this alone will make the combine unpopular and make it a failure.

What, then, is the best thing to do under the present conditions?

We shall have a surplus from last year's crop of about 60,000,000 pounds, and it would be unwise to throw the whole lot on the market and to force the sale. It would be equally unwise to appoint a receiver. The best course would be to release the growers from their contracts to deliver this year's crop and to allow the Association to remain in existence to sell the surplus.

Cupertino. VIATOR.

The Malaga Almond Crop.

Consul Ridgley reports from Malaga, March 15, 1901, as follows: Inquiries have been made from the United States as to the prospect of the coming almond crop in this district. It is considered too early here to speak with any confidence of the crop. Indeed, I am assured by experts that nothing positive can be said before the first of May. In so far, however, as one can vaguely judge at this time, the crop is fully as promising as at the same period of last year; but the winds of March and April are to come yet, and until they have passed nobody knows what the almond crop will be. Incidentally, I may state that it is likely the frost has done some damage in the neighborhood of Granada, but probably not to any great extent. Of last year's crop of almonds, many boxes still remain in Malaga unsold on account of the high prices demanded. This fact, perhaps, has influenced certain persons to assume that the almond crop this year will be small, but there is no valid reason for any such conclusion.

Burton Centrifugal Pumps

are the Standard; they are guaranteed to pump more water with the same power than any other pump, any quantity, any height.

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and as its name indicates, is the strongest wind mill made. Tested a whole year under careful scrutiny. Note strong double gear in right hand cut. Perfect center line draft gives a direct lift to the load—**no torsion, overhanging strain or cramping,** as the load is on four bearings instead of one, as in all other mills. Bearings can be replaced without removing any part of mill from tower. Do not buy until you get free circulars of Samson and our Ideal Art Book. FREE.

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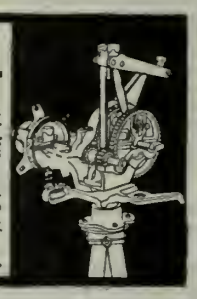

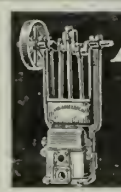

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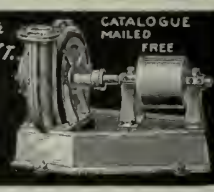

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There is only one perfect fig raised in this country.

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I want a name for it and will pay $25.00 to the person submitting the most suitable name.

The name will be trade-marked and will be used on the boxes of dried figs. It should, therefore, indicate the contents of the package and suggest its superiority.

To trade-mark a name it must be a coined word which does not specifically designate the contents of the package.

Now, get your thinking cap on; coin a catch word and earn $25.00. There are no conditions; it costs absolutely nothing to compete.

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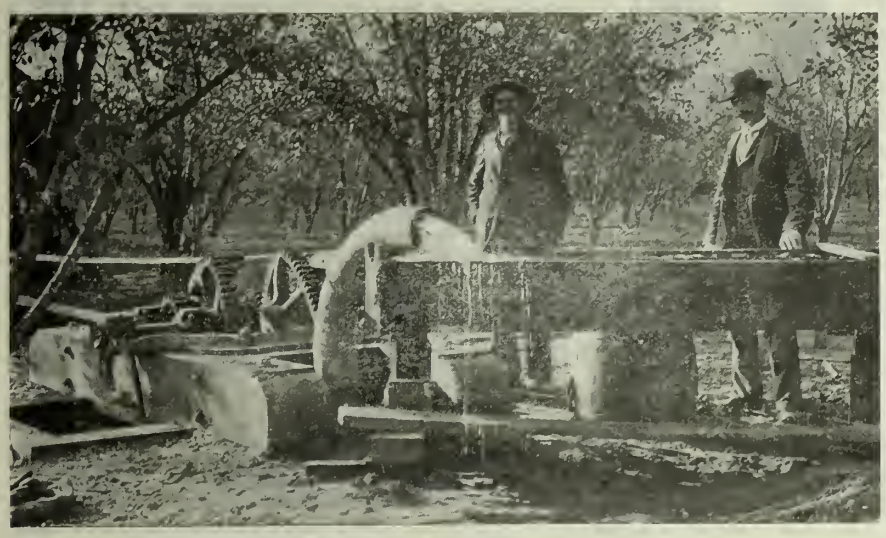
THE first and only Continuous Flow Pump ever made that will deliver an irrigating head from a deep well of small diameter. The Fulton Pump is made in four sizes, as follows: No. 2, No. 2½, No. 3 and No. 4, and can be driven by any kind of motive power.

Before the advent of the FULTON PUMP it was considered not only impractical but impossible to irrigate successfully from deep-bored wells, but after five years' trial it is admitted by all users of the FULTON PUMP to be not only the cheapest but the surest way to irrigate.



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READ WHAT MR. C. S. LOMBARD HAS TO SAY ABOUT HIS PUMP.

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Respectfully yours, C. S. LOMBARD.

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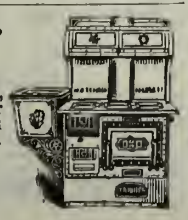

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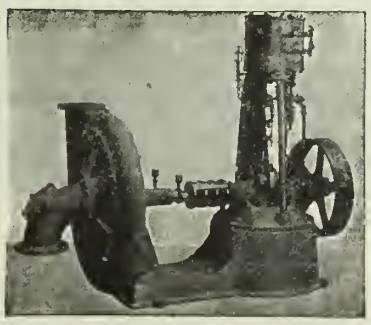

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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR THE WEEK ENDING APRIL 16, 1901.

672,344.—SNATCH BLOCK—Amundson & Knight, Blue Canyon, Wash.
672,401.—BICYCLE SUPPORT—R. Axel, S. F.
672,256.—MOTIVE POWER—G. A. Bobrick, Los Angeles, Cal.
672,257.—REFRIGERATOR—G. A. Bobrick, Los Angeles, Cal.
672,309.—LOCATING MINERALS—F. H. Brown, Los Angeles, Cal.
672,413.—GOLD-SAVING APPLIANCE—T. J. Burke, Los Angeles, Cal.
672,075.—STEERING GEAR—E. H. Cowart, S. F.
672,315.—WATER WHEEL—W. A. Doble, S. F.
672,186.—GAS GENERATOR—J. T. Edwards, Weaverville, Cal.
672,187.—GAS GENERATOR—J. T. Edwards, Weaverville, Cal.
672,320.—COUNTERBALANCE—R. E. Ford, Pasadena, Cal.
672,321.—BADGE—F. Frazier, Scottsdale, A. T.
672,406.—DESK TELEPHONE—H. Herbstritt, S. F.
672,371.—JAR CAP SEALER—W. L. Ingram, Wilderville, Or.
672,131.—TYPE JUSTIFYING—Lena A. Merrill, Riverside, Cal.
671,973.—GOLD-SAVING APPARATUS.—W. Moberry, Oceano, Cal.
672,328.—NIGHT LAMP—H. Moller, S. F.
672,132.—NUT LOCK—Morgan & Main, San Jose, Cal.
672,242.—GARBAGE FURNACE—J. C. H. Stut, Oakland, Cal.
672,248.—FLOUR BOLTING MACHINE—C. L. White, Dayton, Wash.
34,378.—DESIGN—J. Ewing, S. F.

Hedge Plants.

TO THE EDITOR:—I am sorry that I said a word against the Monterey cypress as a hedge plant without offering a substitute, for the reason that there is too much criticism and fault finding, too much pulling down of old houses without providing better ones for the inmates. There are several good hedge plants far better than cypress, according to my notion. The California privet (don't plant the Japanese as a substitute, as it is inferior) is probably unexcelled for general use. It is hardy, easily grown, stands abuse wonderfully and keeps its dark green color exceedingly well.

The laurestinus is another excellent hedge plant for this section, but requires a little care to manage, so that plenty of flowers will appear in winter. It is very beautiful when properly managed. Of course, for low border hedges nothing is better than dwarf box. H. G. KEESLING.

Edenvale, April 28, 1901.

Deafness Cannot Be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that can not be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O.

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THE VETERINARIAN.

To Prevent Abortion.

The Royal Agricultural Society of England, says the Orange Judd Farmer, has been distributing a leaflet to cattle owners throughout Great Britain. It will be noted that no medicine is administered internally, but attention is directed solely to prevention by sanitation and disinfection. The common cause of repeated abortion at intervals in the same herd is contagion. The disease is caused by a germ which multiplies in the womb, between that and the membranes that surround the calf. The premature expulsion of the calf is the result of the inflammation and irritation of the womb set up by the germs, but the cow thus affected may nevertheless carry her calf the full term.

The discharges which come away from an affected cow, and especially those that escape during and after the act of abortion, contain the germs in great numbers and are, therefore, capable of spreading the disease. The disease is probably usually spread by such discharges coming into contact with the root of the tail and vulva of the healthy cow, but it may be spread by means of the bull. Whenever an outbreak occurs it should be treated on the lines applicable to the suppression of other contagious diseases.

The measures adopted should include (1) the prompt removal from the herd of any cow that has aborted, or that shows signs of impending abortion; (2) destruction of the fœtus and its membranes by fire or otherwise; (3) frequent cleansing and disinfection of the cowshed; (4) daily sponging of the root of the tail and neighborhood of the vulva of each cow with a disinfectant solution. In disinfecting the stable attention should be directed mainly to the hinder part of the stalls and the gutter behind the cows. As a disinfectant, a solution of sulphate of copper, chloride of lime or carbolic acid, one in fifty parts of water, may be employed. The more freely this is used the better. For sponging the cows, the following may be used: Corrosive sublimate 2½ drachms, hydrochloric acid 2½ ounces, water 2 gallons. It is important to note that this solution is highly dangerous.

Answers by Dr. Creely.

A CASE OF BONE CANCER.

TO THE EDITOR:—I have a young cow with a sore on the side of her face on a line from nostril to ear. A lump the size of a goose egg came there three months ago and in two or three weeks a small raw sore appeared at the lower end of it. It remains about the same yet, except that the raw, red sore is gradually growing, apparently eating the skin away. It now covers about half of the lump. The lump remains about the same size as at first. What is it and what shall I do for it?—J. W. STEELE, Dos Palos, Cal.

It is osteo sarcoma—a bone cancer. Apply powdered arsenic to the raw surface once only. This will cause a slough, after which it will be necessary to use a wash of warm carbolic water and castile soap, after which apply dry iodoform. It would be best to consult the nearest qualified veterinarian to examine the teeth.

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All the foregoing works are published by the Orange Judd Co., and will be furnished postpaid for the prices given by the PACIFIC RURAL PRESS, San Francisco.

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Mr. George Hansen of Berkeley is a landscape architect of much depth and breadth in his thinking and consequently, perhaps, of much originality in his designs and philosophic exposition of the motive involved. We know of no one in his line who is less conventional and restricted both in design and in command of the principles involved. In a handsome booklet, just published by Elder & Shepard of S. F., entitled "What is a Kindergarten?" there is a claim for proper recognition of the fact that these peerless training places for the youngest of the race are really "children's gardens" and that to omit or to obscure their horticultural features is to sacrifice the best there is in them for the development of the child, mentally, morally and physically. This idea is strikingly presented and is followed by a plea for the proper recognition of this feature and proper effort to secure it. So far, perhaps, any good writer can go, but Mr. Hansen continues to show by precept and illustration how excellent results can be secured even with small space, and cost in this line he passes beyond any literature known to us on the subject. His work should be in the hands of all who have to do with homes and children or who hope for the elevation of the race. The price is 75 cents, cloth, 80 pages, with ten full page plates. The work can be ordered through the PACIFIC RURAL PRESS.

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We have received from B. Cunningham of Liberty, Oregon, a copy of a descriptive catalogue of the Peerless prune evaporator, which he is advertising in our columns. This pamphlet gives a very clear description of his drier and a sectional diagram, so that one can see at a glance the arrangements relied upon to produce the good effects which many who have used it testify to. The catalogue should be consulted by all interested in machine evaporation.

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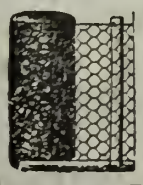

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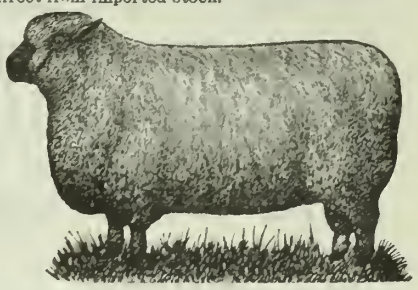

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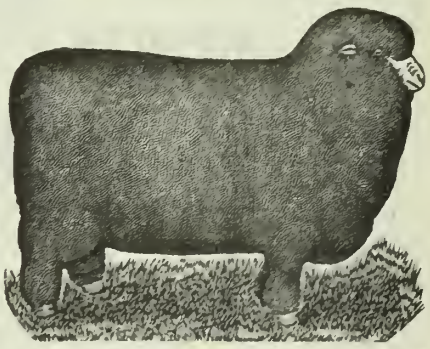

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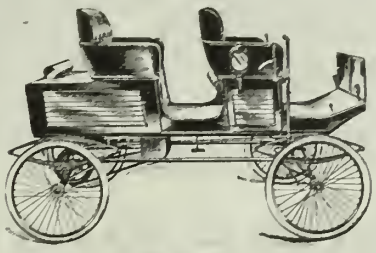

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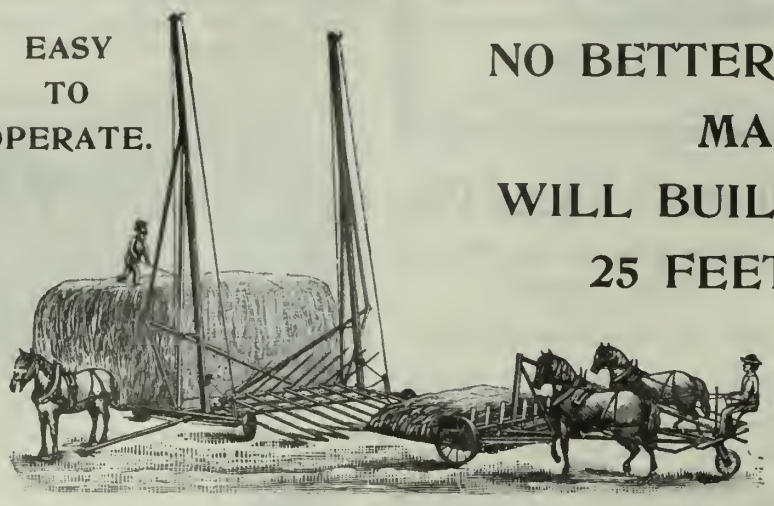

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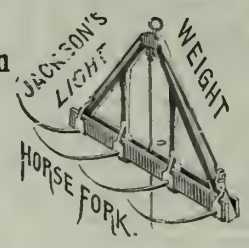

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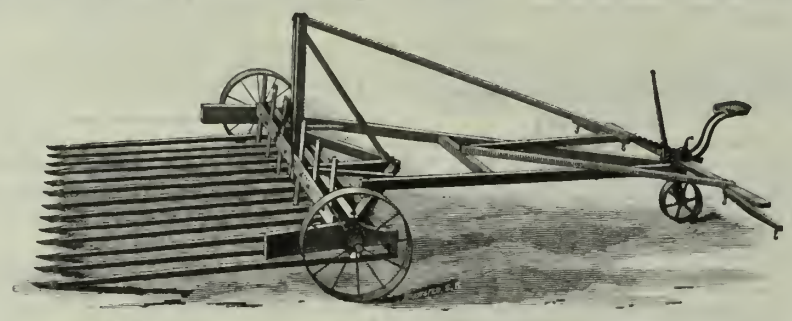

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 19. SAN FRANCISCO, SATURDAY, MAY 11, 1901. THIRTIETH YEAR. Office, 330 Market St.

In the San Joaquin Valley.

There is now much activity and progress manifested in some parts of the San Joaquin valley, and it is timely to print a few words in behalf of this peerless portion of the State. Our readers are kept constantly informed of agricultural doings in the dozen counties which comprise the valley, some of these counties being larger than some Eastern States. What we have in mind now is to indicate the geographical immensity and variety of the valley; and this, with reference also to its geological history, is presented in impressive style in a recent article in the Sunset Magazine with appropriate illustrations:

Long, long ago, when the earth was in the making, the western coast of this continent presented another face than that which now smiles back to the smiling skies. The waves of a great sea then beat against the slopes of the Sierras. Where now are cities and towns and farmsteads, and all the level land is grain and grass and fruit and flowers and foliage, the seagull then winged its lonely flight from morn till eve, and saw beneath it but a waste of silent waters. Then, in the fullness of time, the sea receded. Its last remnant is the bay of Suisun. Its ancient bed is now the floor of the great valley of central California. Four hundred miles long, as the birds fly, and sixty to seventy miles in width, this vast basin is, in itself, an imperial domain.

It is hard, at first trial, to get a just conception of the size of this immense, arable plain, capable as it is of maintaining a population of six or seven millions, possessing every variety of tillable soil, in which flourish, in like abundance, the grains, grasses, vegetables and fruits of the temperate zones and the vine, orange, lemon, olive, date, fig and other products of semi-tropic climes—a valley stretching through such a variety of temperatures that at the very time the Christmas snows are deep upon its mountain walls, the violets are in bloom and the oranges are yellow in the sunlight that floods its floor. Consider, now, with comparison's help, how big this bigness is. Pennsylvania has a great territory; but if Pennsylvania could be set down in this valley, there would be left a ribbon of soil an acre wide and a thousand miles long around the edges of the Quaker commonwealth. Ohio is a great State; but if Ohio were spread out in this valley, there would be left 5000 square miles of the floor uncovered or a vacant spot into which the State of Connecticut could be dropped. Turn the valley into a ballroom, and the six States of New Hampshire, Massachusetts, New Jersey, Connecticut, Delaware and Rhode Island could waltz together on the big floor, and have room to spare, and all the inhabitants of Europe, Asia, Africa and America could find seats around the walls in which to watch the gigantic dance. These comparisons, of course, convey no real conception of the colossal scale on which it has pleased the Almighty Maker to show forth his handiwork. They can but feebly aid. One must stand bodily in the presence of all this immensity; he must set his own feet upon the towering peaks and let his own eyes roam delighted over the panorama unrolled beneath him; he must draw into his blood the sweetness of the smiling vale and the strength of the everlasting hills, before the beauty, the serenity and the majesty of this bright, brave, dear land can lay fast hold upon his soul.

Fruit Drying in the San Joaquin Valley.

The larger plate on this page shows a few of the horticultural interests of the San Joaquin valley. There are, of course, immense stock, grain, dairy and field crop interests, to which we shall allude as other occasion offers. Of the group of pictures on this page the upper one represents a drying field of peaches, apricots or prunes. Below on the left is a glimpse at raisin curing between the vines in the vineyard, while on the right is the interior of one of the immense raisin packing houses. Below are other scenes in the fruit-drying connection. The pictures are all characteristic and significant of important valley interests.

Eucalyptus Viminalis.

The eucalyptus viminalis is a tree which should be better known in places where the temperature conditions are rather trying for the globulus, which is now our most widely planted species. The reports about trees at the University substation for forestry near Chico show that the viminalis grows very fast, and forms a noble tree, perfectly hardy, but not always able to sustain itself against the winds. Trees 80 feet in height and 12 inches in diameter, planted since 1888, are on the grounds of the station. Trees thirty years old are on Rancho Chico.

A Bunch of Eucalyptus Viminalis Trees.

The very curious and interesting group of E. viminalis, shown in the picture, stands on the station grounds. The trees were evidently heeled-in, in a short trench, when taken from a nursery, and grew there. At the present time, from a small base 30 feet long and 3 feet wide, spring twenty-two large and some thirty small trees. The twenty-two largest are from 50 to 75 feet high and from 12 to 35 inches in circumference of trunks. The thirty small trees have merely existed for years past. The trunks touch at the base (90 square feet), and, widening in search of light and air, fill, at the height of 50 feet, a quadrilateral of about 1000 square feet. This is a remarkable illustration of extremely compact tree growth on good soil. The Third State Forestry Report states that Eucalyptus viminalis was the most successful species tested.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, May 11, 1901.

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The Week.

Things seem brighter since the rains. People have become reconciled more or less to the loss of a good part of the fruit crop and are getting what consolation they can out of the chances for good prices for what is left. Some grain and hay will be notably helped, and a considerable area of summer crops will be realized, which seemed at one time out of the question. We are going to pull through the year in better shape than expected on the whole, and shall lay hold on the hope for a return to the old era when the years were all right on both ends and good down the middle also. It is certainly about time for that blissful period to return.

Milling wheat is unchanged but shipping has perhaps weakened a little—still there is little offering and if one wanted much he would have to speak up for it probably. One ship has gone to Europe and a good part of a steamer-load of wheat and flour for South America. Barley is quiet and buyers are holding aloof: not much is offering. Feed barley is slightly lower. Oats are scarce and high and corn scarcer and higher, nothing but Eastern corn being in sight. Beans are quiet and held steadily: only colored beans lacking in firmness. The supply of bran is larger but rates are unchanged. The hay market shows nothing interesting: receipts have been small since the rain, which helps to hold things steady. All meats are rather easier but not changed: hogs are arriving more freely both from local and Eastern supply points. Butter is still steady — the surplus being taken by packers as it arrives; all desirable lots reach quotations. Flat cheese is quiet and weak, but unchanged. Eggs are slow and are not going at such full figures. Packers are nearly stocked up. Many Eastern are going into storage here. A full trainload—twelve cars—of Eastern eggs going into Los Angeles from Kansas shows that the southern hens are not doing their duty. Poultry prices are not quite so good, as there are large supplies, both of local and Eastern; only young ducks are scarce and high. Old potatoes are in light supply and held chiefly by three firms, who expect to do well with them because the first crop of new potatoes was light and full amounts are thought likely to be delayed until July. Onions are scarce; some new reds are coming, and some fresh garlic is also in to help out the old, which has been quite scarce lately. Oranges are quiet and unchanged, with plenty in sight. Lemons are rather easy and limes weak. Cherries are more abundant and lower. A few new apricots have come in from Newcastle and sold at 10 cents per pound and upward. Blackberries are now in from Newcastle, as well as from Covina. A carload of Ben Davis apples is en route from Chicago—so President McKinley can have red apples, perhaps. Dried fruits are quiet. Desirable lots are held firmly because of the outlook, but no one wants to buy on that basis yet. Prunes are said to be selling below the Association limit. Bright, free wool from the northern valleys has sold freely and the outlook is good for northern coast wool, which is not all shorn yet. Scourers are looking around and the wool supply bids fair to be placed all right this spring.

The presidential party will reach California by the southern route and be well within our borders before this issue reaches readers. The trip through the Southern States has been notable, and California has a good measure set for her cordiality and hospitality. During the whole of next week the President will be in and about San Francisco. Of course, the President or his wife will be the great figure; but there are many in California who will be almost as glad to see Hon. James Wilson, Secretary of Agriculture, who has shown himself to be so well informed and appreciative of Western agricultural interests. It has been exceedingly fortunate that a man of Mr. Wilson's depth and breadth has been in the Cabinet during the stirring times of the last few years, and fortunate, also, that there has been such a man in charge of the Department of Agriculture when such opportunities for development and extension of our agrico-commercial arose. Mr. Wilson has forced new life and vigor into the agriculture of this country from the bottom up. He has advanced the science and the popular appreciation of it as no other man has ever done, and through his incomparable system and personnel of investigation has brought the fullest light to the promotion of improved practice. As we remarked upon an earlier occasion, it is exceedingly fortunate that Mr. Wilson remains in place through another term to carry to further fruition the policy which he invoked in the beginning for the promotion of his department and the industry to which its services are earnestly devoted.

It is certainly pertinent to suggest that those in responsible positions in our various agricultural and horticultural associations should seek the acquaintance of Secretary Wilson during his visit, and that individuals who have well-considered suggestions to offer should also wait upon him so far as his time and strength will permit. It is unfortunate that the time of the year does not favor a great convention in this city, but no doubt there will be no lack of use made of the present opportunity. Our water and forest people have much to say, no doubt, and our live stock interests are seeking a hearing for their views and experiences. Our fruit people, in view of the wide injury by frost, should appeal for fuller facilities from the local Weather Bureau to extend its investigation of frost occurrence and prevention. This is a matter in which our local bureau has made a most honorable and creditable record, and yet there is very much still to be done and fuller provision of men and means is needed. The weather forecasting, too, needs to be placed upon, a firmer basis by an extension of observation and possibly by better systemization of the work. The crop reporting feature needs development and something better possibly could be done by combining the weather and crop reports, and the statisticians' reports through a local office at least in this remote district of the country. These are only hasty suggestions to show that there may perhaps be a chance for better work. If there are suggestions in all lines of our agriculture, of progressive effort which might directly minister to the promotion of our agricultural industries, we have no doubt Secretary Wilson will be much interested to hear and consider them. But aside from all this shop work, the agriculturists of California should extend a most cordial welcome to Secretary Wilson and let him know that they have the high regard for him which we know they cherish.

The prune people are proceeding with the effort to agree upon candidates for directors, to be voted for at the next annual meeting. It is, of course, very necessary to do this, in order that scattering and ineffective voting may be reduced as far as possible. The opposition to the present management has crystallized its effort, so far as the Santa Clara district is concerned. All the candidates, outside of those who are now holding office, met in San Jose on Tuesday, together with a number of the growers, and it was decided to cut the number of candidates nominated at the convention of May 2nd down to five—the number allotted for Santa Clara valley—and for the other six to support those from the outside districts who are now on the Board. Those selected for Santa Clara county from the number named at the convention were: W. M. Scott, Cupertino; F. H. Babb, East Side; J. L. Pendleton, Saratoga; E. W. Knapp, Mountain View; H. F. Lord, Berryessa. The ticket will be known as the growers' ticket. The following brief platform was adopted: First, no compulsory delivery of fruit; second, the handling of all fruit tendered by the members; third, economical administration; fourth, the direct marketing of the fruit of the Association; fifth, the extending of the market for prunes at home and abroad. We shall probably have later the declarations of those who support the continuation of the present management or have other ideas on the subject.

It is reported from San Jose that within a few days, upon receipt of all the money due from the sales of fruit during the duration of the 2-cent-a-pound rate, the officers of the Cured Fruit Association expect to have about $300,000 in the treasury. They will then declare another dividend. The reduction to the 2-cent rate for fifteen days resulted in the sale of 39,000,000 pounds of prunes.

The death of Mr. B. M. Lelong by his own hand at Sacramento last week has shocked his wide circle of acquaintances throughout the State, and has awakened sorrow for the loss of a useful man and sincere regret that he should have fallen into a state of mind which made suicide possible. He had evidently lost the hold upon his faculties which for so many years made him an energetic and successful worker in his chosen field, and many will deeply mourn for him. Mr. Lelong was a son of Martin Lelong, who came to California with Stevenson's regiment in the '40's and settled in Los Angeles. In that city the son grew to man's estate and was well known as a diligent worker and student in the affairs of the orange. We first knew him early in the '80's as an experimenter with insecticides, and could but admire his zeal and energy in pursuit of knowledge and results in that line. About 1888 he became secretary of the State Board of Horticulture and served in that capacity until his death, preparing many useful reports and pamphlets and pushing the executive business of the Board with untiring energy. He has earned a permanent place in the horticultural history of the State. He leaves a wife and a young son, who will command the warmest sympathy of the fruit growers of California in the hour of their bereavement and trial.

Stockton is still indulging in rice dreams, for a Louisiana rice grower has told the people that "the lowlands along the rivers are adapted to the growing of rice, as they are situated so that they can be flooded easily and economically, and as the soil is rich. He has been examining the land and has come to the conclusion that the sediment soil would return big profits to the owners, if rice was planted and properly cultivated." Yes, that is just the way it looks to a man up in a tree, and we hope it will prove so. We have had a good deal to say about rice growing near Stockton, and we see no reason to change our statement that the water is wet and the soil is rich; but it is the low night temperature of the summer season on those lowlands which disagrees with the rice plant. We would like to see it tried again on a small scale. It would certainly be unwise to risk much time or money until a demonstration is had.

The potato situation in California, to which allusion has already been made, has excited the spud interest farther up the coast in a most notable manner. On Monday of this week potatoes reached the highest price paid in years in Tacoma, namely, $35 per ton. Three weeks ago farmers were selling their potatoes in the White and Puyallup valleys at $12 per ton. A few clever commission men sent their agents into the valleys in search of potatoes on receipt of warning that the early crop in California had been seriously damaged by frost and rains.

QUERIES AND REPLIES.

Depollinating---Orchard Cover---Japanese Plums.

To THE EDITOR:—Do you know of any spray that can be successfully used on apples and pears while in bloom, to prevent the fruit from setting, which will not injure any foliage that may be on the trees at the time? The idea is to strip the trees of fruit for a season with a view of combating the codlin moth.

What do you consider the best nitrogen gathering plant to sow in an orchard that is intended to remain without cultivation for several years? The soil is a fairly stiff clay, and the climate is usually moist.

Which is the best of Japanese plums for jam making and canning? Is the Satsuma really superior to other varieties in this respect?—READER, New Zealand.

A good drenching of the bloom with cold water, using a nozzle with a straight shoot and good force, applied particularly to the bloom as soon as the petals open sufficiently, ought to depollinate them pretty effectually. The idea of starving the codlin moth by destroying the feeding place of its larva has been often suggested, but, so far as we know, never tried. You will have not only to destroy the apples, but pears and quinces also.

The best legume we could suggest to make perennial growth under such conditions as you mention would be red clover—Trifolium pratense.

The Satsuma plum would make a very dark-colored jam, and would be out of the question for canning, because the juice would be so dark and unhandsome. A light yellow plum would be best for these purposes, and we would prefer the European plums, because of their heavier juice and freedom from the acid and twang of the Japanese group.

Trees from Slips---Prune Varieties.

To THE EDITOR:—What kind of fruit may one expect from French prune and apple trees grown from slips? I refer to rooted cuttings which are neither budded nor grafted. Will the prune fruit be of same quality as parent tree and will the root be hardy?

What is the Italian prune? Is it the same as the Imperial? If not, wherein does it differ and which is the larger?—J. M. HARKINS, College Park.

The tree grown from a slip or cutting will bear fruit identical with that which is borne by the tree from which the cutting is taken. Fruit tree cuttings are, as a rule, rather hard to root and the root system of a cutting is believed to be inferior to that of a seedling, and this superiority of the latter is increased by selection of particularly strong seedling stocks, etc. In the case of the French prune the root will sucker badly and the tree will be smaller than one of the same age grown on either peach, almond or myrobolan.

The Italian prune is the Fellenberg and is an old European variety. It is about the same size but less sweet than the French and usually in California not so free a bearer. The Imperial name covers two French varieties—one inferior, the other good. Both are larger than the French: one is as sweet as the French, the other much less so. The difficulty with the Imperial Epineuse, which is the better one, is that its large size and late ripening make it troublesome in drying.

Rose Mildew.

To THE EDITOR:—My rose leaves look as if they were mildewed and the buds start out but dry up in the bud and do not come out. I cannot see any bugs or lice on them.—R. O. ARMSTRONG, Capay.

Some roses can be prevented from mildew by promoting a more vigorous growth by water and manure. Other roses will mildew in spite of good treatment and will behave themselves with a dusting of sulphur. Others will mildew anyway, and our practice has been to throw them out and seek varieties which know better when they are well off.

Carp Condemned.

To THE EDITOR:—I have a pond on my farm and I would like to put some German carp in it. Where can I get some?—C. W., Santa Cruz.

This fish has proved a great disappointment in California. Most of those who have introduced it to their ponds and streams have deeply regretted it. This fish is so poor that, unless one can command the service of a French chef in the preparation of it, its use as food has been practically abandoned. People along the sloughs of the great interior rivers declare that it is one of the worst things that has ever been introduced, and has displaced to a certain extent better fish. It is much better to stock a pond with trout. If, however, you desire carp, perhaps you can get them from Mr. Poppe of Sonoma, who was one of the original introducers and may still have the stock available. We would like to hear from any reader who has found carp desirable.

Gas Lime Dangerous.

To THE EDITOR:—Please inform me why gas lime would not be a good thing to put on the ground under an apple tree in order to destroy the worms of the codlin moth? How much gas lime can be put under a tree without danger of injuring it while the rains last? If gas lime was spread on the ground quite thick, after the rains cease, would it retain its full strength till fall and be liable to injure the tree by being soaked into the ground with the first rains?—H. HOOPS, Wrights.

Gas lime is a very dangerous application. We should not care to use more than a couple of shovelfuls to a good-sized tree, and should spread it in very thinly. It would, undoubtedly, destroy codlin worms which should let themselves down upon it, and it would kill woolly aphis on the roots. But it would kill the roots, also. We are not sure whether the weathering of a summer on the surface would make it innocent of harm; but we know that it retains its strength for years when covered into the soil, and turns up with full vigor afterwards. It would be well to try some experiments with gas lime if you have some trees you do not care for; but you still incur the risk of killing the ground, also, for a few years if you use too much.

Blackberry Rust.

To THE EDITOR:—I beg to enclose leaf of blackberry bush covered with what seems to be a rust. Will you kindly tell me what it is and the remedy, if any?—M. PETTIT, Fowler, Fresno county.

This is an orange-colored fungus which attacks the undersides of the leaves of the blackberry, the rose, etc. It is a true rust—of the same group of fungi as the rust of wheat. It will proceed with the blackberry until the leaves are destroyed and the new canes weakened, if not killed. This class of fungi is not much helped by sulphur, but the Bordeaux mixture stops its growth and it should be applied at once, and earlier than this next spring before the fungus gets such a start.

Rabbits and Grape Vines.

To THE EDITOR:—Will you please give a way to prevent rabbits from eating young grape vines?—R. H. CRANE, Santa Rosa.

Sprinkling the foliage with commercial aloes—one pound to four gallons of water—or with quassia chips steeped in hot water, will make the leaves very bitter and offensive to rabbits. It costs, however, a good deal to keep putting bitters on rapidly growing vines. Destroying the rabbits is usually a better proposition where rabbit-tight fencing is too costly. Use pieces of fruit pricked with strychnine for poisoning them. Keep a few greyhounds; they are a great protection when they get the hang of it.

Guernsey Cattle.

To THE EDITOR:—Can you tell me through the columns of the PACIFIC RURAL PRESS where I can obtain reliable information about the Guernsey breed of cattle, and what is the objection to them in this State?—CHAS. MEADOR, Visalia.

We have had some good accounts of this breed in these columns. W. H. Caldwell, Peterboro, Vermont, is secretary of the American Guernsey Association, and will send publications on application. The only objection we have heard urged against the breed in this State is an alleged softness of the butter. We are not aware whether this point is well established or not. The richness and high color of the milk is much like the Jersey. Though there were a few Guernseys brought to California many years ago, the breed has never attained prominence. Recently fine specimens have been introduced from Eastern herds, and we shall probably have more Guernseys in the future.

A Peck of Troubles.

To THE EDITOR:—What is the trouble with our plum trees, three years old? They are dying back at the ends of long, new growth. Does the spotted bug have anything to do with the trouble? I had a peach tree barked in the spring and I plastered it over with mud. Now I find it gummed badly all around, but the tree still is growing finely. What can be done with quinces that curl and discolor, their leaves, some of them, dropping off, but can find no insect at work?—READER, Corning.

The insect you send is one of the ladybirds and is hunting for lice on the plum leaves. The holes in the leaves are made by some other insect which you have overlooked. The dying back of the twigs is not due to anything which appears on the specimen. It may be frost blight or something ill with the root as recently discussed in these columns. Remove the gum and dirt from the wound on the peach and if the inner bark is discolored cut around the wound until you reach good healthy bark. Paint the exposed wood and whitewash when dry to prevent sunburn. The wound will soon heal over from the sides. Probably your quinces will show better foliage as the season goes on. If not, send us some specimens.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 6, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Rain continued until Wednesday throughout the valley, the amount of precipitation varying from 1.50 to 3.50 inches. It has been of immense benefit to crops, particularly late-sown grain, corn and vegetables. Orchards, vineyards and hop fields have also been greatly benefited. High winds accompanying the rain caused slight damage to grain and hay in some sections, and the heavy rain injured cherries and strawberries to some extent. Early grain is in excellent condition, and it is now reported that the rain insures a heavy crop of late grain. Hops are growing rapidly and corn is looking well. Haying is progressing. Deciduous fruits are in good condition.

COAST AND BAY SECTIONS.

The rainstorm reported at the close of last week continued until Wednesday, reaching all parts of the district. The precipitation has been sufficient to revive late-sown grain, and in most places it is now reported that a good crop will be harvested. Early grain is in excellent condition and will yield a large crop. The rain has softened the soil, enabling farmers to resume cultivation. A large acreage of corn is planted. Grain and hay were but slightly damaged by the rain and wind. Pasturage is becoming more plentiful. Many conflicting reports concerning the condition of deciduous fruits have been received, but it seems probable that the injury from April frosts was not as great as previously estimated.

SAN JOAQUIN VALLEY.

Generous rains fell throughout the valley Monday and Tuesday and were of the greatest benefit to all crops. The early portion of the week was partly cloudy and the latter clear with warm days and cool nights. The rain did but slight damage to the hay that had been cut and greatly improved that standing. The condition of the grain crop has improved wonderfully; much that was thought would be a failure will now produce a fair crop. In many localities it is estimated that the rain has increased the grain crop over 70%. Fruits of all kinds are in excellent condition, and vines are putting out new growth and look thrifty. Haying continues, and the prospects are for a fine crop. Green feed continues plentiful. Cultivation of orchards and vineyards has been resumed, and the soil is reported to be in excellent condition. Stock is doing well.

SOUTHERN CALIFORNIA.

Rain has fallen in all parts of the district, and in some sections the precipitation has been unusually heavy. Hay has been considerably damaged, but late-sown grain and other crops have been greatly benefited. In some places a fair crop of late wheat will be harvested, while in others the grain was past redemption before the rain came. Early grain is in good condition. The prospects for good crops of beans and sugar beets have been greatly improved. Deciduous fruits were slightly injured by rain and hail in some sections. Grapes and citrus fruits are in good condition.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 8, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.00	45.93	48.47	41.38	54	44
Red Bluff	.00	24.21	22 51	25 18	84	48
Sacramento	.04	19 52	19.84	19.45	78	46
San Francisco	.00	20.51	18.20	21.83	62	46
Fresno	.06	11.06	8.47	8.46	86	46
Independence	.04	5.85	3.65	4 50	80	34
San Luis Obispo	.01	30.85	17 00	16.41	72	40
Los Angeles	.65	15 58	7.54	16.85	68	48
San Diego	.41	11.25	5 83	9.29	64	56
Yuma	T	3.60	1.29	2.86	94	50

HORTICULTURE.

Frost and Fruits.

To the Editor:—In answer to my inquiry as to whether a large crop of vegetation, consisting of burr clover and grasses, would act as protection against injury by frost in a prune orchard, your reply was that you believed it would do so. The theory has been put to a very severe test in the orchard of 120 acres of prunes between Pleasanton and Livermore during the past two weeks, and that there are any live prunes on the trees I believe is largely due to the vegetation above mentioned. I think it is not so much by preventing a fall of thermometer as by condensing and drawing from the air moisture which forms the dew and frost, thereby preventing it from forming on the trees. This is what it did do to a very large extent, except on two occasions, when it rained in the night and once when it rained from 4 to 5:30 P. M., and formed at least a ton of ice the next morning to every acre in the orchard, mostly on the vegetation, but some on the trees and in the cup surrounding the little prunes, which pointed upward and caught the water. These were mostly killed, but those pointing down are very many of them still alive and bright. I kept a memorandum of the thermometer for two weeks. It was as follows:

Date.	Hour.	Thermometer.
March 24	5:00 A. M.	30°
" 25	5:00 "	28°
" 26	4:30 "	26°
" 27	5:00 "	28°
" 28	5:00 "	28°
" 29	5:00 "	28°
" 30	4:30 "	26°
" 31	4:30 "	24°*
April 1	5:00 "	30°
" 2	5:00 "	26°*
" 3	5:00 "	26°*
" 3	9:00 "	rain
" 3	4:00 P. M.	rain
" 3	9:00 "	36°
" 4	3:30 A. M.	26°
" 4	5:00 "	24°*
" 4	7:00 "	28°*
" 5	5:00 "	31°
" 6	5:00 "	29°
" 7	3:00 "	28°
" 7	5:30 "	24°
" 7	6:30 "	30°
" 7	10:00 "	54°
" 8	4:00 "	26°
" 8	5:00 "	24°*
" 8	6:00 "	28°
" 9	3:00 "	25°
" 9	5:00 "	24°
" 9	6:00 "	28°
" 9	7:00 "	30°
" 9	1:00 P. M.	64°
" 10	4:00 A. M.	28°
" 10	5:00 "	27°
" 10	1.00 P. M.	68°
" 11	5:00 A. M.	32°
" 11	1:00 P. M.	70°

Influence of Topography.—We are 400 feet above sea level with a range of mountains between us and the bay, which averages about 800 feet above sea level. This barrier prevents tempering the air by fogs and warmer air from the bay. The topography of the country in the Livermore valley seems unfavorable for orchards and vineyards, though the soil is all right. A. C. Fuller.

Pleasanton, Cal.

This shows the danger of a shut-in valley east of the Coast Range. The same thing has occurred in many counties. We are not sure of the correctness of our correspondent's surmise of the action of vegetation below drawing the moisture away so it can not freeze on the trees. It is a fact, however, that when the temperature remains at 24° for a time a wet tree may be hurt worse than a dry one. It is also true that the presence of water or of vegetation under the tree will not save the fruit when such hard freezing occurs. It is only effective, according to our observation, down to about 27°, and not for long at that degree.

*At these temperatures ice formed freely on the vegetation under the trees, and on one occasion at least an inch of water in a pan froze solid. My thermometer runs 2° lower than my next neighbor's.

Small Fruits in the Pajaro Valley.

The strawberry is the leader among berries in Pajaro valley, says the Watsonville Pajaronian, and probably always will be, but there are other berries which are attracting considerable attention at the present time, owing to their excellent qualities. Pajaro valley's equable climate and fertile soil make the successful growing of blackberries, Loganberries and raspberries a prominent feature among the diversified agricultural pursuits of this section. While these latter berries are not grown nearly so extensively as strawberries, they are beginning to make their presence felt in the markets. A larger acreage is devoted to blackberries than to either Loganberries or raspberries; but the Loganberries, which stand second as to acreage and production, give promise of a bright future. They are a comparatively new berry and are meeting with favor by those who have given them a trial. The Loganberry possesses some of the best qualities of both the blackberry and raspberry, and is thought by many to be superior to either. The demand last year for Loganberries was heavy and the acreage in this valley is being largely increased from year to year. Besides being a delicious table berry, it keeps well when canned. The berries are large, rich in color and superior in flavor. Loganberries require considerable care and entail quite an expense, but will return a nice profit if properly handled. No doubt the new berry will yet occupy a place on the market that can not be easily filled by any other berry. Between 3000 and 4000 chests of blackberries are shipped from this valley yearly, and the total shipments of Loganberries and raspberries amount to about 3000 chests. Following are the names of the growers and the number of acres each has in:

Grower.	Blackberry.	Raspberry.	Loganberry.
R. W. Eaton	27	14	8
Driscoll Bros	..	..	2
G. H. Brewington	5	..	..
B. Scrivani	1½	2	..
E. C. Bronson	3	..	..
Jas. Hopkins, Jr	1½	..	..
R. Pinto	10	..	3
O. O. Eaton	3	..	..
Wing Wah Sing	2	..	..
I. H. Tutle	3	..	1
Jos. Albright	2	..	..
M. B. Tuttle	2	.	..
Seely Bros	..	..	10
C. E. Chesebrough	2	..	..
S. Nishimuri	3	..	1
McKean Bros	..	..	10
P. Sheehy	5	3	5
Totals	70	19	42

The above list does not include small patches. It applies only to fields of commercial importance.

Small Fruit Growing at Florin.

Mr. G. Cox, of Florin, Sacramento county, has done a public service for some years back collecting statistics of small fruit growing in his region, which we have been pleased to transfer to our columns. In his last compilation, which was prepared for the Sacramento Bee, he deals with the cost and profit of the small fruit establishments and incidentally mentions methods and policies which are widely interesting.

Character of the Region.—The district is underlaid by a water-bearing stratum, so that water for irrigation may be had at a depth of 16 or 18 feet, and raised to the surface by means of bored wells, pumps and windmills. Bearing in mind that irrigation in this way is practicable over a large area of the valley land of the county, the facts and figures given for Florin will in general apply to other districts, save that it may be necessary to go deeper for water.

An Estimate of Outlay.—Here is Mr. Cox's showing of what may be done with $2500:

FIRST YEAR'S OUTLAY.

Dwelling, barn, etc.	$ 700
Horses, wagon, cow, etc	250
One windmill, pump and well	73
Fifteen acres land	900
Planting two acres strawberries	84
Planting five acres grapes	148
Total	$2,155

This leaves a margin of $345 to live on the first year, which, with a few dollars that can be earned by working for the neighbors, during the grape season, is sufficient.

The second year the newcomer will get 600 crates of strawberries from his two acres, which will net him $400. He will then have to put up two more windmills to irrigate the berries and grapes.

Fifteen acres of good fruit land is sufficient for a man, wife and two children, and if well cared for will give them plenty of employment.

What Has Been Done.—Experience and observation have demonstrated that small holdings, say fifteen or twenty acres, all under cultivation in fruit, and properly managed, are more than equal to 150 acres of hay and grain land, as regards net profits, and with less hard labor.

To illustrate: Mr. A. went on a twenty-acre fruit ranch five years ago, without capital. He borrowed money to carry on the business. To-day his ranch is clear of debt, and last season he sold $3000 worth of orchard fruit, grapes and strawberries, at a net profit of $2000.

Such cases are numerous.

Here are some other instances, showing what can be done under the very best management from strawberries—yield and profit: L. C. Steward, of Florin, in one year sold from 100 rods of plants (five-eighths of an acre), $900 worth of strawberries at a net profit of $650.

George Taylor, South Florin, sold from one-quarter of an acre of strawberries two and one-half tons, which brought $330, yielding a net profit of $220 per acre.

Will Taylor, South Florin, in the season of 1899, harvested twenty-one tons of Jessie strawberries from six acres of land. The fruit sold for $2870, an average per acre of $478.30. There was a net profit, on the six acres, of $1900.

Wages.—The above figures for cost of planting, etc., are on the basis of hired labor. Average rates of wages, hiring of teams, etc., are: White labor, $1 per day and board; Japanese, $1 a day without board; man and team, $2.50 a day; grape pruners, $2 a day; grape trimmers, $1 a day; strawberry pickers, $1 a day.

The average cost of levelling valley land, to put it in proper shape for irrigation, is from $10 to $15 to an acre. This is a permanent leveling.

Land well suited to the production of table grapes and berries, within a radius of 10 miles from the City of Sacramento, may be had at from $45 to $75 an acre, according to distance and shipping facilities, quality of soil, etc.

Within this circle is the greatest berry district in the State, and table grapes may be grown to perfection. With water for irrigation, abundance of garden truck, berries, etc., may be raised, and the city affords a good market near at hand.

Where the newcomer himself does all the work on his place a much smaller cash outlay is sufficient than that above indicated. And by devoting a small patch of land to alfalfa, which can be grown on any land with irrigation, and keeping a cow and poultry, with bees, etc., the cost of living can be reduced to small figures, and sales of eggs, chickens, etc., be made to help out the income.

Harvesting Peanuts.

To the Editor:—I noticed in your last issue inquiry in regard to peanut growing, and would like to suggest through your columns a quicker and cheaper way to harvest them than the old method of picking them off. After the vines are dry and thrown in piles, place a large sheet beside the pile; then picking up and holding the vine by the bottom strike the nuts off with a light stick; then run through a fanning mill which will remove the leaves and empty pods. They are then ready for sacking.

Dinuba. H. Thompson.

FLORIST AND GARDENER.

Horticulture at the Pan-American Exposition.

To the Editor:—In the division of horticulture at the Pan-American Exposition one of the most elaborate exhibits of the kind ever collected may be seen in the Horticulture Building. A great variety of material from the different countries represented is here shown in a variety of products greater than any collected heretofore.

The Horticulture Building is an exhibit in itself, being the handsomest temporary structure ever built for such a purpose. The Approach alone to this building comprises an outdoor exhibit that is interesting and well worth a careful examination. From the Esplanade the Approach curves past one of the elegant Esplanade fountains, with its accompanying basins of aquatic plants, the pathway forming an incline that reaches to the magnificent eastern entrances of the Horticulture Building. This incline is bordered by many odd varieties of fruiting trees and shrubs, interspersed with massive vases, containing beautiful tropical foliage effects, as well as many odd bloomers and fruit plants that are unusual and seldom seen, even in the greenhouses in the latitude of Buffalo.

Large as the Horticulture Building is, it will not contain all the horticulture exhibits, as many semi-tropical ferns, palms and various other species of trees, vines, shrubs and flowering plants are planted in different directions about the building, as well as in a plot of ground that extends across the front of the building on the opposite side of the Grand Campus. This plot has been under course of preparation for many months—a fostering care that is now being revealed in the smiling appearance of spring flowers, liberally sprinkled here and there in sections between grass plots; it presents a restful attraction, in pastoral contrast to the hum of busy, energetic action that is so characteristic of all other sections of the exposition.

Absence of straight lines in laying out the walks, with an apparent natural carelessness in connection with the whole plan, together with the blending of color with the quiet green grass plots, conspire together to render the surroundings of the Horticulture Building one of quiet, beautiful significance. The area called the Music Garden lies between the New York State marble building and the entrance to the Midway and Forecourt; it contains about 200 beds, aggregating over 300,000 square feet, comprising many different sizes and containing a great variety of flowering plants, which will be extremely gay with color during the whole of the Pan-American season.

One hundred and fifty thousand bulbs were planted last fall, consisting of hyacinths, tulips, narcissuses, jonquils, Spanish iris, etc. These bulbs are now bedecking themselves in the brightest and most gorgeous colors, in anticipation of opening day,

May 1st. They will be at their brightest and best the first week in May, and from this time on this flower section will constantly change, being arranged to present a succession of flowers month after month during the whole season.

All these beds are filled with exhibits contributed by upwards of fifty of the leading horticultural firms of the country and are under the care of William Scott, assistant superintendent of horticulture.

For exotic plants conservatories have been provided in connection with the Horticultural Building; these conservatories are semi-circular in form, connecting the Horticultural Building with the Mines Building; temperatures herein are suitable for the proper care of exhibits of tender tropical growths. Here, as everywhere in this section of the exposition, continuons attraction has been carefully considered, and it will make but little difference whether the visitor inspects these collections in May, July or October, the contents of the conservatories will be exceedingly fine.

An interesting feature of the horticulture department will be the series of flower shows to be held from the opening day till the closing. The dates have been selected to suit the largest range of exhibitors and are as follows:

Carnations	May 1 to May 8.
Tender roses	May 21 to May 25.
Peonies	May 28 to June 7.
Hardy roses	June 18 to June 25.
Sweet peas	July 23 to Aug. 2.
Gladiolus	Aug. 6 to Aug 17.
Asters	Aug. 27 to Sept. 7.
Dahlias	Sept. 17 to Sept. 27.
Chrysanthemums	Oct. 22 to Oct. 31.

In the horticulture exhibit many odd varieties of fruits are shown from many different countries; green fruit will be exhibited preferably in its natural state, relays being carefully preserved during the whole time in cold storage to replace defective specimens on the trays as they decay. Where this is not practicable, preserved fruits, both desiccated and in liquid, are shown instead. In some instances manner of cultivation, as well as products, are shown in connection with the exhibit, as the management has made each exhibit as elaborate as possible.

Many of the foreign exhibits appear odd and interesting, and no doubt will lead to commercial results of more than ordinary importance. Never before has a horticultural exhibit been provided with such a beautiful elaborate setting, and never before has an exhibit proved so well worthy of it.

Buffalo, N. Y., April 26. HERBERT SHEARER.

THE POULTRY YARD.

Poultry Diseases.

We conclude below the account of poultry diseases by Prof. E. F. Pernot of the Oregon Experiment Station, of which the leading portion was given in our last issue.

LUNG DISEASES.—During the spring months the writer was called to examine many broods of incubator chicks which were dying in great numbers, and there were also many specimens sent through the mails to the station for examination from different parts of the State. In all the specimens examined there were but three troubles found. One was pneumonia, another congestion of the lungs, and the third will be mentioned later on. The two former were the results of the little chicks having become chilled.

There is but one step between the two diseases, and the environments which are responsible for the chicks taking cold and producing congestion of the lungs are factors in conjunction with the pneumococcus in producing pneumonia.

For the benefit of the Oregon poultry raisers who desire to examine their diseased fowls suspected of having pneumonia or congestion of the lungs a few plain directions may be serviceable.

In congestion of the lungs the chick, after being chilled, becomes mopy and stupid, the respiration is rapid and difficult. It "looks cold," and if possible will attempt to gather warmth from a ray of sunshine which may find its way into the brooder house. The symptoms appear quickly and the disease runs its course in a short time.

Upon examination the lungs are found to be very dark in color and filled with blood. If a blood vessel has been ruptured the bronchi and air sacs will be filled, a thick mucus will likely be found in the windpipe and mouth, and suffocation is the cause of death. In pneumonia the symptoms are similar to those described in congestion of the lungs—the discharge from the mouth or nostrils may be colored with blood or have the color of prune juice; the bird becomes mopy, with head drawn in, drooping wings and ruffled feathers. The appetite is poor but thirst increases.

The lung, or lungs, after death are found to have a dark color and are solidified, owing to the engorgement of an exudate. If a portion of the lung were dropped into water it would sink, whereas the healthy lung tissue would float. This form of pneumonia is known as croupous pneumonia. There is another form known as broncho-pneumonia, in which the bronchial tubes are affected with inflammation and the lung does not become so solidified.

The pneumococcus, the germ which is conceded to be the cause of pneumonia and which is so closely associated with it, is also found in the mouth during health, awaiting a favorable opportunity to develop. When a bird becomes chilled from exposure or draughts, dampness, or sudden changes of temperature, the blood is forced from the surface of the body into the lungs and other organs, the circulation is checked and congestion follows.

Such a condition of the lungs, aided by the germ, no doubt changes congestion into inflammation, and the blood vessels throw out a liquid which coagulates after filling the air cells, thus accounting for the firmness and solidity of the lungs in croupous pneumonia. Some of the brooders and brooding houses in use are altogether wrong for this climate, where there is such a great difference in temperature between night and day, especially in the humid spring months.

BAD BROODING HOUSES.—Some of the brooder houses visited were constructed of rough lumber, they were cold and draughty, and were but mere shells without ceilings or means of maintaining an even temperature. The brooders were placed on the floor and heated with kerosene lamps which continually gave off irritating fumes. Some were heated from above and others from below. The continued breathing of these vapors, gases or impure air depletes the system of the young chick, making it more susceptible to taking cold. There were large numbers of chicks in each brooder and in the early part of the night they would huddle closely together, raising the temperature by the radiation from their bodies. Those in the center of the group, although too warm, were compelled to remain where they were and breathe that foul, smoky air all night long. Early in the morning they would emerge from their stifling sweatbox into the run in search of food, where they would stand and peep in an atmosphere 30° or more colder than their brooder. The result was that they became thoroughly chilled before their attendant arrived, and died by the hundreds from the colds which they contracted.

Unless some means are found to maintain an even temperature during the night and day in the brooder house, and dispense with the foul oil lamps in the brooder, chicken raising with the incubator will not be a success in this section during the early spring months.

AN OREGON HEATER.—A very ingenious device, in use by a young lady in Salem, as a substitute for the oil-heated brooder, was found and is worthy of mention here. It consisted of a square wooden box or frame, with sides about 6 inches high. Across the top of this frame were arranged laths at intervals of 1 inch. From these laths were suspended strips of woolen goods about the width of carpets rags, tacked closely together, and reaching nearly to the floor of the frame. A cover provided with holes for ventilation was placed a few inches above the slats, and the whole structure was covered with an awning similar to a tent. The temperature was maintained at night with a lamp situated outside, from which pipes conveyed the heat to the enclosure. An opening at one end of the frame, protected with cloth strips, communicated with the run outside.

The advantage of such a device is that it prevents the chicks from huddling too closely together and becoming overheated, the strips keeping them separated, and there is perfect ventilation. The radiated heat from their bodies is retained by the strips of wool. The laths, with strips attached, may be removed at any time and scalded to prevent lice or germs from accumulating.

Devices of this kind, placed in evenly heated brooder houses, would be worth more than all the remedies known for incubator chicks, because it would be removing the cause of the disease.

Ninety-nine per cent of the chicks were raised in this manner, while those raised by the ordinary brooder, in the same neighborhood, did not average 60%.

GENERAL PRECAUTIONS.—To be successful with them, the strictest sanitary precautions must be observed to prevent contagious and infectious diseases among fowls. Even then germ disease will occasionally manifest themselves from unknown sources, but they are much easier controlled when they attack robust, healthy fowls in cleanly premises.

Great care should be taken not to allow any other than perfectly healthy fowls to enter fairs, nor any place where they are collected for exhibition. It seems needless to add that children should be forbidden to handle or to be with diseased fowls, especially those affected with diphtheria or diphtheretic roup, as these diseases are transmissible to human beings.

The treatment for lung diseases in fowls is very unsatisfactory because the seat of the disease is inaccessible, and its progress so rapid, that but little can be done to check it. In the event of a valuable bird being affected, it is well to remove it to a warm room and administer a soothing drink, such as linseed tea. One grain of nitrate of potash dissolved in the drink and administered three times a day has been highly recommended. Too much cannot be said in urging the necessity of keeping the delicate chicks from taking cold. They are poorly clad, especially along the back under which the lungs are situated, and the small amount of food which they take before going to roost for the long night is insufficient fuel to maintain the body heat until they are fed again in the morning. Hence the necessity of providing a brooder house that will be as warm in the frosty morning as it was the evening before. Not too much heat and good ventilation, without draughts, are also very essential points.

INDIGESTION.—The third mentioned case was that of some incubator chicks which had died, the owner finding some yellow substance in their abdomen to which he attributed the cause of their death.

There appears to be a heavy loss of incubator chicks through the lack of understanding their requirements while quite young. At that period of their life they must have rest, warmth, and no food. Nature has provided that a portion of the yolk from the egg should be inclosed in the abdomen, which furnishes the young chick with food by absorption for from two to four days after hatching. During this period their digestive organs mature and become capable of digesting and assimilating light food. Gradually they become stronger and their appetites increase according to their needs.

Some of the chicks dissected were found to have their craws partially filled with food and a fair quantity of unabsorbed yolk in their abdomen. All the conditions gave evidence that they had died of an acute indigestion. Particles of undigested food were found in all parts of the digestive tract.

By closely observing the habits of the mother hen the loss of so many chicks could be easily averted, for she is seldom in a hurry to begin feeding her young.

Fowls are subject to a great many other diseases not mentioned in this bulletin, but the results of investigations and experiments will be published as new cases arise. Ordinarily it is difficult to distinguish the different diseases by the appearance of the fowl, because the symptoms are so nearly alike with different ailments. Moping is one of the common symptoms, and, unless a careful examination is made, the nature of the disease will probably not be discovered, and if it is of a contagious or infectious nature serious losses may follow.

The administering of medicines to fowls is unnecessary if proper food is given them and sanitary precautions are observed.

Trap Nests.

TO THE EDITOR:—Will you kindly describe the trap nest, or tell me where it can be had, referred to by Miss Florence Forbes, in her "Notes on Poultry Raising," at the Napa Farmers' Institute, and published in the PACIFIC RURAL PRESS on April 20th?—EMELINE E. WILSON, Grand Island.

TO THE EDITOR:—We use the Reliable nest box. The price of plans and permission to build them is $1. Address M. L. Newell, Denver, Colo., Box 179. He is the inventor. We also use the Hawkeye nest box. These are sold by the Cypher Incubator Co., 325 Dearborn street, Chicago. They cost about $1 apiece, for you cannot buy patterns for the Hawkeye.

Both are good boxes. The Reliable is cheaper than the Hawkeye. The Rocks and Wyandottes like the Reliable nests, the Brahmas prefer the Hawkeye.

It gives me great pleasure to answer any question the PACIFIC RURAL PRESS asks on this subject. We find these trap nests invaluable and are only too glad to endorse them. F. FORBES.

Napa.

Inventors and manufacturers of such desirable appliances should keep their goods before our readers by means of our advertising columns. It is both a duty and a business opportunity for them to do this.

Blood Meal and Meat Meal.

TO THE EDITOR:—Will some one tell me how often and in what proportion to feed meat meal or blood meal? Could the lack of animal food be the cause of Minorca hens laying small eggs? What should meat meal cost and where can it be procured?—SUBSCRIBER, St. Helena.

TO THE EDITOR:—Blood meal and meat meal are highly concentrated foods. The former is the richer and costs more. I regularly once a day feed meat meal to my poultry, in the proportion of one part meat meal to four parts bran and corn meal. For a few weeks, at least, I shall use formula No. 1 for a balanced ration, sent me by Prof. Jaffa, and published in the PACIFIC RURAL PRESS of May 4th.

All fowls, small and large, should have some animal feed in their daily rations. I presume the lack of it might cause hens to lay smaller eggs than they would when it is used. Besides, it causes the hens to lay many more, and continuously—at least, that has been my experience with White Leghorns.

There are different makes of meat meal on the market. There are poor grades that are dear at any price. "Subscriber" can find the addresses of dealers in your advertising columns.

Napa. A. WARREN ROBINSON.

TRACK AND FARM.

The Market Classes of Horses.

NUMBER I.

By E. Davenport, Professor of Animal Husbandry, in Bulletin No. 62 of the University of Illinois.

According to the best estimates available, only about 60% of the horses that make their way to the Chicago market fill the requirements of the recognized market classes, leaving 40% as "unclassed."

Market Classes Represent the Most Useful Types.—From the nature of the case, the market classes represent all the types and classes for which any general demand has asserted itself, and, if a new use should arise demanding a new type of horse, the attempt to secure it would immediately give rise to a new market class.

Too Many Unclassed Horses.—While it is and always will be true that the breeder will often fail to produce what he aims to secure, nobody believes that his failures should amount to 40%. The late veteran horse breeder, M. W. Dunham, said that in his experience a good breeder working with good blood, though aiming at comparatively high standards, should succeed seven times out of ten. In making this statement he was alluding to standards vastly higher than the average of those demanded in the so-called market classes; therefore, according to his estimate, more than 70% of horses should fill market requirements, if they were really bred to that end.

Lack of Standards in Breeding.—Inasmuch as so large a proportion fail to come to any valuable standard whatever, whether the one they were bred for or some other, we are forced to infer that horses are not produced for distinct purposes and bred to definite ends as generally or as successfully as they should be; in other words, that a large proportion of the 40% is removable and should be eliminated.

Market Standards and Classes of Horses not Generally Known.—The most of the horses that supply the great markets are produced upon the farms of the country and by farmers largely engaged in crop raising and with other kinds of live stock. A somewhat extended study of the matter reveals the fact that few farmers of this class have definite knowledge of the distinct classes recognized in the markets or of the types and characters demanded for each. They have, therefore, been working in the dark, having no model in mind and no standard to breed to; and we are forced to the conclusion that a large proportion of horses that are suited to the market needs were produced not by design but by accident. This is borne out, not only by the 40% of unclassed horses that go to the markets, but by the unnumbered mob of "scalawags" that remains behind on the farms, too bad to sell, and kept "to raise colts."

This conclusive evidence of lack of standards in horse production, together with the positive knowledge that farmers as a rule do not know the market classes of their requirements, has led to the publication of this bulletin, which is an attempt to define each market class and describe the type of horse that will fill it.

Columbian Exposition Established the Chicago Horse Market.—The World's Fair of 1892 brought to the attention of European dealers, not only the high quality of American horses, but the almost infinite capacity of this country for their economical production. Because they could buy more quality here for the same money, or the same quality for less money, than in their own country, horses were immediately taken in large numbers for export, and this foreign demand established the Chicago Horse Market on a solid basis and with well defined classes.

Foreign Trade and City Demand Fix Market Prices.—These purchases were always for particular purposes, giving rise to well defined market classes and calling for definite types of animals. Not only that, the "horse consumption" of this country, constantly and rapidly increasing, calls for the same classes and types demanded by the foreign trade, with such additions and variations as are naturally incident to our home conditions. It is hardly necessary to remark that the home demand, like the foreign, is largely limited and the classes fixed by the city needs. Stated broadly, therefore, it is the city demand, both foreign and domestic, that has fixed the classes and types of horses in the Chicago markets, and, for that matter, in all markets. Moreover, this demand is so particular and the classes and types so well defined, that horses making their way to the great markets are classified, graded and sold according to their classification as accurately and as absolutely as is wheat or any other commodity.

Utility Fixes the Class and the Value.—Market classes are established, not according to the age of the animal or degrees of soundness, but according to size, conformation and style; that is to say, utility for particular purposes is the basic principle of classification, and the ability of the animal to fill the particular purpose is what fixes his class and his value, with the exception that all high-class horses must be sound and possess no glaring faults.

Classes not Continuous.—As might be expected, these classes do not generally overlap, nor do they always meet; that is to say, the gradations are not uniform, passing from one class directly into the next. There are gaps between them, often wide ones, through which an animal may drop, so to speak, and, though young and sound, may be a cheap horse; for example, if he be too light for a draft horse and yet too heavy and "drafty" for the 'bus, he is too much for the one and too little for the other, and, even though considered by himself he may be a good horse, he is nevertheless a cheap one, and no man who understands his business would produce him if he could help it.

The Five Market Classes.—Classes differ somewhat in different markets; but in Chicago, which claims to be the greatest horse market in the world, there are five distinct and well defined market classes in large demand. They are classified from the standpoint of utility, and, except in Class 5, may or may not be registered animals. They are all based upon special needs, and all call for particular size, conformation and style.

Class 1.—Road, Carriage and Coach Horses.

Uses.—This is the highest of unregistered horses on the market, though many are of the highest breeding and all must show good blood. They are distinctly driving horses, though not racers, and are used for private work as distinct from public service. Accordingly, they are driven to all sorts of private vehicles, either for business or pleasure, from the light runabout drawn by the road horse to the elegant victoria, brougham or heavy coach drawn by the carriage or coach horse. They are distinctly gentlemen's drivers, whether handled by the owner or his coachman, and all the conditions call for a high class horse to correspond with good to elegant appointments and to satisfy the eye of a horseman, or, at least, of a lover of horses. They are used both in city and country, but are found chiefly on the boulevards and in the parks of the larger cities before fashionable turnouts driven by a coachman, or before a light wagon driven by the owner for the pleasure of driving. They are used singly and in pairs, and, when matched, uniformity in size, style and action are imperative, while differences in color or sex are almost disregarded. It may be said in general, however, that though the market professes not to distinguish between mares and geldings, yet most men feel a decided preference for the latter, and only the limited supply of horses of high quality prevents this choice from asserting itself and a higher price ruling for geldings than for mares.

Description.—The varied uses to which these horses are put admit a wide range in height and weight. Horses may vary in height from 15 hands to 16 hands 2 inches, and in weight from 1000 to 1200 pounds, and still rank in this class, though these are extremes. The typical specimen would stand from 15-3 to 16 hands and weigh from 1100 to 1150 pounds.

In color, there is little choice between bays, blacks, browns, chestnuts and sorrels; but light grays are not in favor, and unsightly colors and markings are barred out. The form, style and action, however, must be strictly high class, and, whether registered or not, they must show plenty of good breeding.

In form they must be both beautiful and serviceable. The head must be clean and fine and well carried upon a neck that rises gracefully from the shoulders. The forehead must be broad and full, ears well carried forward, eye full and bright, all showing intelligence, docility and spirit. The nostrils must be large and open, the muzzle fine and the neck of medium length, clean and well carried, without need of check. Short, heavy heads, dull eyes, drooping ears, short, beefy necks, ewe necks and thick necks, all bar horses from this class.

The shoulder must be sloping, the back short and well coupled, with a full, strong loin; the barrel round, the hips smooth, and the tail set high. The legs must be straight and alike and free from all unsoundness and serious blemishes; the bone must be flat and clean, the tendons strong and smooth, the knee wide, the hock strong and the pastern moderately long and sloping. There should be a proper proportion between the forearm and the cannon. If the forearm be too long the result will be a knee-sprung horse after considerable service; if too short he will be "calf kneed," i. e., the knee joint, as it is called (properly the wrist), will appear as if shutting too far backward and breaking down. The proper relative length of these two bones is believed to be not far from 21 inches for the forearm to 11 inches for the cannon. The foot should be moderately wide at the heel, show dense horn and stand squarely under the leg, with no suggestion of being "pigeon toed" (toes pointing inward) or "nigger heeled" (heels close and toes outward). Last of all the body should be covered with a full coat of fine soft hair and carry a fair amount of flesh, but without an appearance of beefiness. Nothing is so good an evidence of quality in a horse as fine hair and prominent veins standing well out on the face and over the body.

Every line and movement should please the eye, and satisfy the demand for a stylish horse. He must show considerable speed but his work must be done neatly and with apparent pride and satisfaction to the animal. He must respond to the will of the driver and exhibit sense and courage in the presence of unusual sights and sounds.

Nothing is more important in these horses than action, and nothing expresses what is wanted better than the word, "directness;" or as the horsemen call it "straight line movement." What is meant is that the legs should move forward in straight lines, neither swinging in to "interfere" nor out to "wobble." In taking the step the foot should be well folded in at the pastern and thrust forward, but in straight lines with no suggestion of "paddling." In carriage and coach horses the knee and hock should be carried moderately high in action, especially the former and the front foot and leg from the knee down should exhibit a rolling action the foot taking the ground lightly at the bottom of a circular movement, so to speak, and not thrust forward into the ground, causing pounding and rapidly "staving" the horse on pavements and hard roads. For road horses in which ability to cover distance is a prime requisite, excessively high action is a detriment rather than otherwise as it wears out the horse when his energy is needed for getting over space. In these horses the front leg should be nicely folded as it is taken from the ground then thrust far forward, not punching into the earth but reaching its farthest point while yet 3 or 4 inches above the ground then dropping straight down, taking the ground lightly. This is the easiest trotting pace therefore the most useful for covering distance, and if well taken is as sightly as any other though it presumes considerable speed.

In both types the fore and hind legs must move in harmony and neither interfere with the work of the other. If the hind legs are too long the hind feet will strike the front, unless the horse "straddles," which is unsightly; if too short or lacking in action the horse gives the appearance of trotting in front and walking behind, the most awkward known gait and commonly found in a horse too long in the back.

In this class belongs the "cob," which is distinctly an American type, the trade in cobs being confined to this country. The cob is a blocky, "natty" little horse some 15—1 to 15—2 weighing 1000 to 1100 pounds and much in demand as a single driver in a light buggy.

Values.—Horses in this class sell at from $150 to $300 and upward, fine specimens selling readily at $400 or $500, and in some instances at $1000 and upward. These horses are worth from 25% to 50% more when well matched than when single, and in all cases the value depends greatly on the training and "manners" exhibited; for in no other class of horses is an animal sold more upon his merits as a performer than in this class of gentlemen's drivers.

Production.—Two elements go to establish the value of these horses—the horse himself and his training. The latter must be done by some one well up in the methods of handling horses and in what the trade calls for. This will generally be the regular dealer or his agent or employe.

The production of the horse himself, however, is a matter of breeding and reasonable feeding and care. Without the former, no feed, care or training can make a high class driving horse and one certainly cannot be made out of a scrub.

The most successful blood for the production of carriage and coach horses has been that of certain strains of the Standard Bred, or American Trotter as he is often called, the French Coach, the Morgan and the Hackney, and road horses have been most successfully produced from the Trotter and the Morgan. Whatever blood is employed, it should be used on brood mares of good form and substance and of a size and type to correspond with the blood of the sire. Whoever undertakes to produce these horses should send them to the markets untrained unless he be a horseman in fact as well as in opinion. Some of the finest specimens are permanently ruined by bad handling long before reaching the markets. The most common mistakes are, first, the use of the over-check while young, making a "ewe-neck" and a bulging throat; second, speeding while young, developing the racing spirit, latent in all these horses, before they have learned real action, and making it impossible thereafter to make good "workers" of them; and, third, clipping the foretop, which, though only temporary, detracts from his value enough to pay his keeping until it grows out. This damage from a clipped foretop is considered in the markets as $25.

(TO BE CONTINUED.)

Wheat Growing in Washington.

Wheat growing seems to have taken on new life in eastern Washington. In Franklin, Adams and Whitman counties, large areas of sagebrush land, which it was formerly thought could not be cultivated except by irrigation, are being successfully sown to wheat. As an experiment one Franklin county farmer last year plowed up a thousand acres of sagebrush in the middle of the desert near Pasco. He reaped an average of thirty bushels to the acre. About Washtucna, in Whitman county, from 50,000 to 60,000 acres of new wheat lands will produce their first crop this year.

Agricultural Review.

ALAMEDA.

A GOOD YIELD IN PROSPECT.—Niles Herald, May 3: J. H. Hayes is one of those who does not agree with the prevailing opinion that all fruit and nut crops will be extremely light this year, and a visit to his place near Decoto will convince the most skeptical that there is at least one place where there will be a heavy yield of almonds, apricots, prunes and a very good crop of cherries. It was only nine years ago that Mr. and Mrs. J. H. Hayes purchased ten acres of the famous Bell ranch. Around the whole place on the property line 135 almond trees were set out, six acres of 648 apricot trees, and one acre each of prunes, peaches and cherries, with 108 trees each, filled up the place. The almond trees are now so heavily loaded that the limbs will have to be propped or tied up to prevent them from breaking, while the apricots are about in the same condition. Fully three-fourths of the latter are being taken off in the thinning process. The peaches also have to be thinned to prevent the destruction of the trees. The cherries are the only light crop and those will give a very good yield.

BUTTE.

BENEFICIAL STORM. — Chico Enterprise: While the crops in the vicinity of Chico were less in need of rain than any other section of the State, there were some places where moisture was becoming a necessity, but the last storm gave an abundance of moisture for all growing crops and will insure a bountiful harvest of both grain and hay.

MONEY IN SHEEP. — Gridley Herald: H. A. Woodworth, who lives near Gridley, has a small band of sheep—about 150 head—from which he has cleared a neat sum already this season. He sold fifty head of lambs for mutton recently for $4.50 per head, and since making that sale he has made a still better one, selling twenty head of two-months-old bucks for $10 per head. These two sales brought Mr. Woodworth $425, and with the proceeds of the wool—two clips—he will have in the neighborhood of $100 more to add to his exchequer. Mr. Woodworth has a fine breed of sheep and has contracted his next lot of young bucks for $10 per head, and from his experience our farmers might take a lesson. When breeding stock of any kind always breed to the best.

PLANTING ORANGES AND OLIVES.—Oroville Mercury, May 2: A good many oranges and a few olives are being planted in this section this year. At Thermalito W. A. McNamee is planting ten acres to seedlings for Rev. W. A. Davis of Japan, and two acres of navels for Rev. W. E. Vaughn of Sacramento. Louis Glass is planting trees on five acres of the land purchased of Henry Anthony, increasing the orchard from ten to fifteen acres. Messrs. Reyman and Breslauer are increasing their six-acre orange orchard to ten acres, and the Citrus Association is planting twenty acres to oranges. At Palermo D. C. McCallum is planting twelve acres to oranges and Louis Glass is planting olives quite extensively.

COLUSA.

FINE COLUSA LEMONS.—Colusa Sun, May 2: Two hundred pounds of lemons were gathered one day this week from a lemon tree in Mrs. W. E. Jones' yard, and we captured a twig with three on it that weighed two pounds. There are no better lemons grown anywhere in California than in Colusa. No family has any excuse for not having lemons all the year round. A couple of pretty yard trees will do it. The fruit is healthful and pleasant.

FRESNO.

WATERMELONS GALORE.—Reedley Exponent, May 2: Unless all signs fail, Reedley the coming season will be one of the large melon shipping points in central California. W. H. Graham has 110 acres planted that are up and looking fine. George Ingram has 40 acres in the same condition. With this 150 acres on the very best of land, it is a fine nucleus for Reedley to be well advertised as the watermelon section, for the melons will likely be fine, large and juicy.

KINGS.

FRUIT GROWERS' MEETING.—Hanford Journal: The fruit growers held a mass meeting Saturday to consider the matter of pear and prune blight and phylloxera. After discussing the question thoroughly it was decided that the bees were the chief distributors of the above named diseases. It was the sense of the meeting that a committee be appointed to wait upon the board of supervisors at their next meeting and see what can be done to prevent the evil complained of.

MONTEREY.

GRAIN CROP DOUBLED BY RECENT RAIN.—Salinas Index, May 2: Some of the tall grain was knocked down by the wind and rain, but the damage in that direction will be but a mere trifle when compared with the great good that will result from the generous downpour this week. The rain will in many places double the crops of grain and hay.

GOATS FROM ASIA MINOR.—Salinas Index: C. P. Bailey of San Jose, the pioneer raiser of Angora goats on the Pacific coast, has four Angora goats of a very superior breed now on the way here from Asia Minor. They were purchased by his son, Dr. Bailey, who was traveling in that country, and shipped to Naples, thence by steamer direct to New York.

ORANGE.

CELERY GROWERS.—Anaheim Gazette, May 2: Articles of incorporation have been filed with the county clerk by the Celery Growers' Association, composed of producers in the peat lands. The association starts out with a large acreage. The directorate is composed of the following gentlemen: Harry Goodnight, W. T. Clark, B. R. Gerhardt of the peat, and C. F. Heil and M. C. Cole of Santa Ana.

WALNUT BUYERS ON THE SCENT.—Anaheim Gazette: Walnut buyers are in the field this early, looking after the crop, which promises well. As yet no sales have been made, but it is believed prices will not range quite so high as last year.

DECIDUOUS FRUIT EXCHANGE.—Anaheim Gazette, May 2: The annual election of officers of the Southern California Deciduous Fruit Exchange was held in Los Angeles on Monday. A. R. Sprague was re-elected president, J. B. Neff of Anaheim vice-president, and Morton Haig of San Gabriel secretary. Mr. Sprague will have charge of deciduous fruit shipments for the northern exchange and will be located at Sacramento for six months during the coming summer.

SACRAMENTO.

NEW FRUIT PICKING BASKET.—Folsom Telegraph: R. A. Wakefield of Orangevale has invented a basket for fruit pickers which promises to be a decided success. It is made to hang over the shoulders by straps, and it is so arranged that the person using it has perfect freedom of the arms. The basket is also contrived so that it can be emptied without bruising the fruit, as is the case with the ordinary basket.

SAN BERNARDINO.

LATEST RAZZLE DAZZLE.—San Bernardino Sun: One of the slickest bunco games of the age was played recently in the western part of the county. A rancher named P. Loubet had working for him a Frenchman named Camille Figier, who asked for his pay early in March and Loubet gave him a check for $50 on a Pomona bank. Later Figier, when apparently drunk, drew out what purported to be a check, and showing it to Loubet, touched a match to it, and burned it, saying he did not want checks, but cash. As he wanted to leave, Loubet paid him off in full in coin, including the $50 which Figier had burned, and the latter left and went north. Several weeks after Loubet, on getting his bank book balanced, found that the $50 check had been cashed and that it was a bogus check that Figier had burned. He came in to interview District Attorney Curtis, but the latter told him there was no hope of seeing his money again, as there was no clue to the whereabouts of the wily Frenchman.

SAN LUIS OBISPO.

SODA SAVES A SNAKE-BITTEN HORSE.—San Luis Obispo Breeze: A few days ago while R. R. Hampton was in McKittrick he had two horses feeding on the common. One of these horses was staked out and the other was loose. Last Friday Mr. Hampton went to look at his horses and found the loose one apparently in a dying state. Examination disclosed the fact that the horse had been bitten on the nose by a rattlesnake while browsing on the grass. Mr. Hampton was at a loss about what to do to relieve the animal, and thought it would die. He finally met a man, the constable at the place, who told him that if he would split the horse's nose where the snake had bitten it, and put some common baking soda in the wound, and bind it up, the animal would immediately show signs of improvement, and in a short time recover completely. Mr. Hampton tried the remedy and the result was astonishing. The horse was in great agony and would surely have died had not the soda cure been resorted to.

SANTA BARBARA.

LOMPOC'S MUSTARD CROP.—San Luis Obispo Tribune, May 3: Carl Saunders of Lompoc says that, instead of three sacks to the acre, the Lompoc valley mustard fields are now practically sure to produce from fifteen sacks at the minimum to thirty sacks. The mustard growers had given up hopes of making more than three sacks of mustard to the acre. But the range now will be from fifteen at the minimum to thirty sacks. As the mustard sells at about 3 cents per pound, and there are ninety pounds in a sack, the value of the rain can be appreciated. There are 1000 acres planted to mustard. The average will be something like twenty-five sacks.

SANTA CLARA.

A LUCKY ORCHARDIST.—Gilroy Gazette, May 3: George S. Tremaine exhibited to friends this week a couple of branches of prune trees from his orchard at San Juan, which were laden with young fruit. They were untouched by frost and the crop promises to be something extraordinary. The yield last year was lighter than usual. Mr. Tremaine is fortunate in having his orchard situated in a favored belt that thus far has never been visited by damaging frosts.

LOS GATOS PRUNE CROP. — Correspondence San Jose Herald, May 2: A great many people will no doubt be surprised by a larger crop of prunes this season than they now anticipate. Mr. Farwell of the big Glen Una prune orchard states that the yield this year will be very good. This is the largest prune orchard in the county.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: There have been several apple orchard sales during the past week, and at prices fully up to those of last year. Some of the sales are for two years.——At present the promise is splendid for a heavy apple crop in Pajaro valley. Apple trees were looking well before the storm, and the heavy rainfall insures sufficient moisture for Pajaro orchards for this season. The apple crop should be large and of best quality.——The brown scale, which used to be so troublesome in this valley, is now so scarce that it is almost impossible to find a good specimen, so orchardists have little to fear on that score. Some mysterious beneficial insect, not yet known, is rapidly destroying the brown scale. In many places the scale may be found dead, with a small puncture in his back. An endeavor is being made to ascertain what insect is eradicating this form of scale.

WALNUT CULTURE.—Santa Cruz Surf, May 2: The Frapwell brothers of Corralitos have planted out several hundred English walnut trees on some of their best land, where they have prune trees. The latter they will pull out after this season's crop has been gathered.

WILD BLACKBERRIES IN SPRING.—Boulder Creek Mountain Echo: W. F. Horstman brought to this office last week some ripe wild blackberries, plucked from the bushes on his ranch in the thermal belt on Two Bear creek. In the locality mentioned vegetation has been growing all winter as if it were spring time, and Mr. Horstman made everybody in this office envious by telling of various and sundry wild blackberry pies that had already been served on the family board in his neck of the woods this year.

PLYMOUTH ROCK HENS TO THE FRONT. — Santa Cruz Surf: P. J. Dutcher has a Plymouth Rock hen that has made a record. It laid two eggs in one day and on another day it laid an egg with three yolks.

SHASTA.

SUGAR BEET CULTURE.—Searchlight: It is reported at Anderson that Adolph Spreckels is negotiating for the purchase of a large tract of land on the Sacramento river, 5 miles southeast of that place, for the purpose of raising beets for a sugar factory to be established close to the railroad. The land mentioned is the Haggin tract of 960 acres and the Washington homestead of 1500 acres. The deal, if it is really going on, is being kept very quiet, the agent doubtless having other lands in view. The tract was once planted in grapes, and the fruit contained more saccharine matter than that from any other part of the State.

STANISLAUS.

THE FLAX EXPERIMENT. — Modesto Herald, May 2: Samples of flax from the something less than quarter section planted a few weeks ago near Turlock by the Pacific Fiber Co. show stalks from 12 to 18 inches in height, and rapidly approaching the flowering stage. This flax was planted late—very late, it is conceded—hence it is rather short, no provision having been made, as originally planned, for irrigating. The stand is very thick. In all likelihood the timely and generous rain will make a comparatively fine crop of it and warrant the company's proposed extensive planting and fiber works. It is evident that an ideal crop would have been produced had the seeding been timely. The Pacific Fiber Co. propose to employ the flax fiber in the manufacture of fine linen. The seed, too, is valuable; but we do not know whether both can be derived to advantage. It is probable that the fiber deteriorates where the crop is permitted to stand until the seed attains commercial value. Nevertheless it is a profitable crop for the seed alone, as for the fiber alone.

VIGOROUS ALFALFA.—Modesto News: A fine stand of alfalfa was on exhibition last week in the show window at Husband & Turner's. It was raised on C. N. Whitmore's land at Ceres. The alfalfa was about 5 feet tall and was the third cutting from seed sown last October. The land was irrigated and shows the difference between irrigation and non-irrigation. Water is more valuable than land.

SOLANO.

A FRUIT COOKER.—Dixon Tribune: J. D. Johnson has turned out a new fruit cooker for Foster Bros. cannery. The receptacle is of increased capacity over that formerly used in Foster Bros. canning establishment, and is built to order on plans originated by Everett Foster. The cooker is drum-shaped, and when in position lays on its side. A track on the bottom side of the drum enables the operator to push a carload of 500 cans of prepared fruit inside the receptacle. When the car is in place the door is closed and made air-tight by means of a simple contrivance designed for the purpose, and the steam turned in from a generating boiler. A steam pressure of from 12 to 18 pounds is maintained for a prescribed time, when the fruit is removed and properly sealed. The new cooker will greatly increase the capacity of the cannery, and it is also expected to add to the quality of the goods turned out.

TEHAMA.

LARGE RENTAL SCHEDULE.—Red Bluff Sentinel: Mrs. J. D. Sherwood has leased to the Quong Hop Co. 100 acres of the Hazlett place, southeast of Tehama, for a term of ten years, ending November 1, 1911. Two hundred dollars shall be paid September 1, 1904, and $200 October 1, 1904, $250 on the same dates in 1905, $750 on the same dates in 1906, $1000 on the same dates in 1907, $1250 on the same dates in 1908, 1909 and 1910, making a total of $11,900 for the 100 acres for ten years, or an average yearly rental of $1190, or $119 an acre for the ten years. Mrs. Sherwood agrees to furnish materials for necessary buildings, car tracks, and trees for planting 50 acres of Muir peaches, 20 acres in French prunes and 25 acres in Bartlett pears in the spring of 1901, the Chinese to do all of the plowing, planting, hauling, and keep the orchard in proper condition during the term of the lease.

YOLO.

DEATH FROM GLANDERS. — Winters Express, May 3: Thomas Kehol, a young man well known in this community, died at the home of his sister, Mrs. James Sweitzer, Wednesday. He had been ill about a month; Dr. Caldwell pronounced the disease glanders. Kehol came here from Napa county, where he had been working on the Clark ranch near Monticello. He told the doctor that several horses on the ranch were affected with a disease called the "big head," and, from a description of it, there seems to be no doubt that the animals have glanders. While glanders is not a contagious disease as to men, it is infectious, and, when once communicated to a human being, death is sure to result. There is but one case known to medical records of recovery from the disease. It is communicated to the human system usually by foam from a horse's mouth or droppings from a sore touching an abrasion in the skin, and, when once inoculated, there is no hope for the victim.

PRICES FIXED FOR HAY BALING.—Gridley Herald: The Hay Balers' Association of Yolo county has fixed the prices for pressing hay during the season of 1901 as follows: For pressing hay, everything furnished, $1 per ton; baler to furnish wire, $1.45 per ton; baler to furnish wire and board, $1.70 per ton.

ROUGH EXPERIENCE WITH BEES.—Danville Enterprise; Dixie Hightower was the victim of an accident as unique as it was unpleasant Tuesday morning, while plowing at the Oakshade orchard with a team of two horses and two mules. In passing under the branch of a tree the team disturbed a swarm of bees, which got their deadly darts to work with such good effect that two of the hapless brutes were stung to death, and Mr. Hightower was placed under the care of Dr. Dixon in an unconscious condition and with 500 or more stingers in his flesh. He is now out of danger.

THE HOME CIRCLE.

A Match.

If love were what the rose is,
And I were like the leaf,
Our lives would grow together
In sad or singing weather,
Blown fields or flowerful closes,
Green pleasure or gray grief—
If love were what the rose is
And I were like the leaf.

If I were what the words are,
And love were like the tune,
With double sound and single,
Delight our lips would mingle
With kisses glad as birds are
That get sweet rain at noon—
If I were what the words are,
And love were like the tune.

If you were life, my darling,
And I, your love, were death,
We'd shine and snow together
Ere March made sweet the weather
With daffodil and starling
And hours of fruitful breath—
If you were life, my darling,
And I, your love, were death.

If you were thrall to sorrow,
And I were page to joy,
We'd play for lives and seasons
With loving looks and treasons,
And tears of night and morrow,
And laughs of maid and boy—
If you were thrall to sorrow,
And I were page to joy.

If you were April's lady,
And I were lord in May,
We'd throw with leaves for hours
And draw for days with flowers
Till day, like night, were shady
And night were bright like day—
If you were April's lady,
And I were lord in May.

If you were queen of pleasure,
And I were king of pain,
We'd hunt down love together,
Pluck out his flying feather
And teach his feet a measure,
And find his mouth a rein—
If you were queen of pleasure,
And I were king of pain.

—Charles Algernon Swinburne.

Mr. Swan's $20 Gold Piece.

"It is pretty."

Mrs. Swan lifted the end of the long strip of linen which lay across Althea's lap and looked admiringly at the open-work embroidery with which it was adorned.

Althea smiled assent and went on snipping and drawing out threads.

It was a hot June afternoon, and, for the sake of the light breeze, Althea had brought her work out on the porch. For companionship Mrs. Swan had followed her, and sat nursing her arms on the top step. Every few moments Mrs. Swan would arise and hurry into the kitchen to stir something that was bubbling and boiling on the stove. Every time she moved, her clean, crisp calico dress rustled.

"Althea," she gasped, as she sank down and wiped her face on her apron after one of these hurried journeys to the hot kitchen, "Althea, I'm going to ask a queer favor of you."

"Yes?" questioned Althea in surprised interest. She had never known Mrs. Swan to ask a favor of any one.

"I want you to loan me a dollar." Mrs. Swan made the request with evident reluctance. She went on quickly before Althea could reply: "You c'n take it out of your board money."

"Why, certainly," said Althea, in amazement, "I owe you more than that. I can let you have more than that. I wish you—"

"No," interrupted Mrs. Swan, "one dollar is all I shall need. I want to get a piece of linen like this. I want to make my sister Sue a bureau scarf for a birthday present."

Mrs. Swan smoothed the shimmering surface of the linen with caressing fingers. "Long's haven't the right kind, I want the dollar to go to Went's and get a piece just like this."

Althea drew out a long shining thread and wound it around her hand.

"I know you think it strange that I should ask you for the money instead of Hiram," continued Mrs. Swan, looking suspiciously into Althea's face for some sign of inquisitiveness. But Althea bent placidly over her work.

"I did ask Hiram for it last night. But instead of giving me what I wanted, what do you suppose he did?"

Althea bit off a thread and made a slight negative motion of her head. She knew Mrs. Swan's peculiarities too well to risk a verbal reply. A word, especially the wrong word, might have disastrous results.

"He took a piece of money out of his pocket, laid it on the corner of the mantel and went off to bed without saying a word. This morning when I looked at the money I saw that it was a $20 gold piece. I thought, of course, that Hiram had made a mistake; you know a $20 gold piece and a silver dollar are about the same size and heft, and it is rather dark in the room, for, since daylight lasts so long, we hardly ever have a light. But at noon when I asked him about it, he said no, it was all right. He hadn't made any mistake, and kind of grinned, and that was all I could get out of him."

Mrs. Swan paused and Althea knew that some response was expected from her. A person unacquainted with the intricacies of Mrs. Swan's mind would have been sure to blunder. Althea might have been consumed with curiosity as to what happened next, but she only threaded her needle with great deliberation and remarked casually: "Well?"

What actually did happen made Althea catch her breath and shrink away from Mrs. Swan as if her friend had struck her.

"It's just Hiram's meanness!" exclaimed Mrs. Swan, bitterly. "And it's just like him. He thought it was foolish extravagance in me getting the linen. He thought if he gave me one dollar I would spend it for something that didn't amount to anything, but if he gave me twenty dollars I would put it in the bank and save it. Save, save; I get sick and tired of saving."

Althea's eyes sparkled with indignation at what she thought to be an unjust accusation. She opened her lips to speak, but thought better of it and closed them again.

Mrs. Swan, blind to everything but her own grievance, went on with her tirade. "It's just stinginess. He knew I wouldn't break into a $20 gold piece just to get a little piece of linen. It wouldn't be over 60 cents, and I counted on getting the thread besides with the dollar. I've earn—"

A loud hissing sound, mingled with the odor of burning fruit juice, came from the kitchen, warning Mrs. Swan that her supper needed immediate attention.

Althea heard her lift a basin from the stove, empty the contents, and carry them to the ice-box. It was stewed cherries, and the delicious spicy odor filled the air.

When she came back, Mrs. Swan seemed a little ashamed of her anger. She sat silently gazing at the horizon for a few moments with haunted, burning eyes. When she spoke again it was with moderation.

"Now I've made such a fool of myself," she said. "I suppose I might as well tell you the whole story as to the way Hiram and I fell out on money matters. It began five years ago last spring, when we built this house. See that wire fence out there by the side of the barn?"

Althea was well aware of the existence of that fence. She skirted it twice daily on her way to and from school, and more than one rent in gown and jacket testified not only to its existence, but to the sharpness and tenacity of its barbs.

"Well," continued Mrs. Swan, "the spring we built this house the forty acres of land enclosed by that fence was for sale. Hiram wanted to buy it, but I wanted to build a house. We had money enough to do one of these things, but not enough for both. Hiram thought the house might wait a year, but if we didn't buy the land at once Rube Thornton would.

"I had my heart set on the house. The old shanty that we'd lived in ever since we kept house wasn't fit to house cattle in. It was leaky and dirty, and the walls were full of mice and roaches and things unmentionable. I didn't feel as if I could live in it another year. So we built, and before the summer was out Rube bought the land and run his line fence within 10 feet of our barn door.

"Hiram was mad, and, of course, blamed me; although the next year, when we got ready to buy, we got better land for less money on the other side—good smooth farm land, while Rube's forty will never be fit for anything but pasture. But, somehow, the sight of that fence so near has always seemed to rile Hiram.

"I said then that I'd never ask him for another thing that I could possibly get along without, and I never have until I asked him for that dollar last night. I've paid for all that we've eaten and most that we've had to wear with butter and poultry, and I'm six months ahead at Long's now."

Mrs. Swan rested her chin in her hand and relapsed into a moody silence. Althea folded her work and went upstairs to get the money. A great many things that had puzzled her before were made plain by Mrs. Swan's confidence. She had often wondered why Mr. and Mrs. Swan treated each other with such studied coldness. She had also wondered at the meager furnishings of the house. The house itself was a handsome and commodious farmhouse, but the furniture was the same that had been used in the old log shanty. And Mrs. Swan loved pretty things.

Althea liked both Mr. and Mrs. Swan. In the eight months that she had made her home with them she had, in spite of Mrs. Swan's peculiarities, come to esteem them highly. Mr. Swan, as a director of the school district in which she had taught, had especially won her respect.

He had seemed to her almost an ideal officer, entering heartily into all her schemes for the improvement of the school, and showing no sign of the parsimony of which his wife accused him.

As Althea opened a drawer to get her purse, a photograph lying face upwards confronted her. She lifted the velvet case and looked long into the pictured face. The clear eyes seemed to gaze back at her with a new significance.

It was Hugh, dear Hugh, who was working so hard and so patiently to prepare the little home for her coming. Althea saw the dear face through the mist of an overwhelming desire to see him at once. She wanted to lay her arm around his neck and listen to his heart beat, while they made their vows all over again.

Would they—could she and Hugh ever come to be to each other what Mr. and Mrs. Swan were? The suggestion was altogether abhorrent to Althea. She had not presumed to hope that their united lives could be all sunshine; sickness would come, and troubles and worries common to humankind; aye, even death itself might for a time separate them. But not this other—

Althea laid the little picture down on the bureau and bowed her face upon it. "Not that," she murmured; "oh, anything but that." It was almost a prayer.

Althea walked slowly down stairs and laid the dollar in Mrs. Swan's hand.

"I guess Hiram's afraid we'll all die in the poorhouse," Mrs. Swan remarked, facetiously, as Althea resumed her work.

But Althea could not make a jest of it. To her it was a very serious matter. She tried to see her own future from Mrs. Swan's point of view and it frightened her. She looked up quickly, almost defiantly. She must speak.

"Mrs. Swan, you are mistaken. Your husband wants you to have that $20 gold piece." Althea's voice was very stern.

"Wha-wha-at did you say?" gasped Mrs. Swan.

"He wants you to have that money for your very own. He's sorry that he was cross with you about the house, and he wants to make it up in some way. Oh, Mrs. Swan, please forgive me for speaking. But you all have been so kind to me, and I cannot bear to see you misunderstand each other in this cruel manner."

Althea was getting incoherent. The instant the words had left her lips she would have given worlds to have recalled them. Mrs. Swan was very angry. Her lips were set in a straight line and Althea was conscience stricken at the effect of her interference. She knelt on the floor and slipped her arms around Mrs. Swan's waist.

"Please forgive me," she pleaded. "I know that Mr. Swan meant for you to have the $20 gold piece to do with as you like. He didn't say so because he didn't know how to come at it—men are such proud, stupid creatures. He wouldn't care one bit if you spent every cent of it for bureau scarfs."

Althea laughed a little nervous laugh at her own absurd suggestion, and the awful lines about Mrs. Swan's lips relaxed a little. Althea's hopes rose.

After a long pause, during which Mrs. Swan seemed swayed between the two extremes of anger and remorse, she said, abruptly: "But $20 is a great deal of money. What could I do with so much?"

Althea felt that the battle was won. If she could only be discreet now all would be well. To say the right thing in the right way was what she must do. The $20 gold piece was a peace offering, and the success of its mission depended upon herself. Wellington marshaling his hosts at Waterloo was not more circumspect that she.

"Oh, you can get rid of it," she said, brightly; "never fear as to that part of it. She picked up her work and went on in the most matter-of-fact tone: "You can get your linen for one thing, and you can get one of those gingham dress patterns that you thought so pretty. Then you might make Mr. Swan a present of an armchair with part of it. Hasn't he a birthday or an anniversary of some sort coming soon that you can remind him of in this way?"

Mrs. Swan vouchsafed no reply to these bold suggestions. She sat stiff and unyielding, but Althea saw that she was interested in spite of herself, and went bravely on.

"You ought to subscribe for a couple of good periodicals for Rob. He needs them. It would help him keep away from the saw mill. Haven't you noticed that he never goes the evenings my magazine comes?"

This last was a very adroit move on Althea's part. Mrs. Swan's life was made burdensome a great share of the time by her only son's predilection for haunting the dangerous neighborhood of the saw mill, and by his association with the more or less disreputable characters who frequented the mill.

"Then there is always the library

HOLE IN THE LUNGS

There are thousands of men and women, as well as ever, with holes in their lungs: consumption stopped.

Consumption stopped is consumption cured. What does it?

Some change in the way of life and Scott's emulsion of cod-liver oil.

With the emulsion, give some attention to circumstances: change from a dark damp close room to a sunny dry airy one; from city to country; from hard to an easy life; indoors to out.

A hole in the lungs once healed is no worse than a too-tight waist or waistcoat.

Take the emulsion, and give it a chance to heal the wound.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

fund," went on Althea, gayly. "You can give $1 to that. I had planned to solicit 50 cents from each family. But, to help you to dispose of this troublesome $20 gold piece, I will let you give more. Then with the vast sum which we expect to realize from our grand last-day entertainment we will be quite rich."

Althea had planned to close her career as a district school teacher by laying the foundation of a library in the Swan district. And, lightly as she spoke of the project, its success was very near her heart.

"Well," admitted Mrs. Swan, after another prolonged silence, during which Althea vacillated between hope and despair, "maybe I have been stubborn and blind. If I have, I've been well punished for it. I'm going to think it over. Althea, you're a good girl."

And Althea was more than satisfied with this meager admission of Mrs. Swan's forgiveness.

For three days Mrs. Swan went about her work with a jerky abstraction of one inwardly perturbed. Every morning when Althea came down to breakfast she cast a surreptitious glance at the corner of the mantel where the $20 gold piece lay in serene purity of metal.

On the fourth morning she caught her breath with a little gasp of nervous uncertainty when she saw that the yellow disk was missing.

Mrs. Swan was cutting thin slices of ham for Althea's lunch. She glanced quickly at Althea when she came into the room. Her cheeks were quite pink, and her eyes were suffused with a new, soft light.

"Next Tuesday's our wedding anniversary," she said, in a low, joyous tone. "We've been married just fifteen years. I'm going to get Hiram one of those armchairs at Duffey's. I'll hitch up and come along by the school house this afternoon about 4 o'clock, and you can come along and help pick it out. Which do you suppose he'd like best, the leather or the plush?"

"The leather, of course, you dear, little woman," said Althea, as she walked around the table and kissed Mrs. Swan on the forehead.—The Ladies' World.

Health and Beauty.

Dark rings around the eyes result from congestion of the veins. This is nearly always a consequence of debility, temporary or chronic. The immediate cause may be study, sleeplessness or worry. The best local treatment is prolonged cold water bathing. But all these cases demand constitutional measures.

When boots have become thoroughly soaked with water, fill them with warm, dry bran and lace or button them up. Hang in a warm place, not too near the fire. The bran will absorb all the moisture and the leather will be soft and pliable and not so liable to crack as if dried in the ordinary way. The bran can be used again and again after it has been dried.

Skin scientists assert that all applications are harmful, one reason being that pigments repeatedly applied to the skin become to a certain extent absorbed and remain in a changed, muddy state beneath the surface. Possibly the least harmful of the many agents employed is raw beet, but its use is by no means free from danger. Beet contains sugar, and sugar is very apt to provoke an attack of eczema. Whenever artificial coloring is employed it is essential to watch the skin carefully. If it shows any increased tendency to muddiness, red lines or roughness, or becomes tender, the coloring agent is probably to blame. Of course, a great deal depends on the other treatment the skin may be receiving. A woman who steams, massages and uses a good nutrient will bring her skin into a state that is able to stand, in great measure, the hurtful action of the rouge or other coloring agent adopted.

MRS. FUSSY: John, you're the most unreasonable man I ever met in my life." Mr. Fussy: "I don't doubt it. I'm the only one that ever married you."—Pick-Me-Up.

Wisdom of William Penn.

Be rather bountiful than expensive.

Never marry but for love; but see that thou lov'st what is lovely.

He that has more knowledge than judgment is made for another man's use more than his own.

The usefulest truths are plainest; and while we keep them our differences cannot rise high.

Never give out while there is hope; but hope not beyond reason, for that shows more desire than judgment.

There are some men like dictionaries—to be looked into upon occasions—but have no connection, and are little entertaining.

If thou hast not conquered thyself in that which is thy own particular weakness, thou hast no title to virtue, though thou art free of other men's.

Do nothing improperly. Some are witty, kind, cold, angry, easy, stiff, jealous, careless, cautious, confident, close, open—but all in the wrong place.

"HERE'S a story of a dog that hatched out a nest of eggs which had been deserted by the hen." "Does it say what sort of a dog it was?" "No, but it must have been a setter."—Judge.

A WELL KNOWN medical journal offers this advice: "If the child does not thrive on fresh milk, boil it." Why not begin by merely spanking it? It may learn to like it after awhile.—Atlanta Journal.

DOMESTIC ECONOMY.

Domestic Hints.

RHUBARB TARTLETS.—Cut the desired amount of rhubarb into inch lengths, pour boiling water over it and let stand for ten minutes. Have tartlet moulds lined with a rich paste and fill with the rhubarb. Into each sprinkle plenty of sugar, a bit of butter, a few drops of lemon juice and just a drop or two of brandy, not more than two drops to a tartlet. Cover with paste and bake for twenty minutes or till done.

PRESERVED PEAR CHIPS.—Eight pounds of pears, six lemons, five pounds of sugar, one-half box of preserved ginger. Cut the pears into small, thin slices, slice four lemons, peeled, and two lemons with peel on; slice the ginger also. Put all into a deep dish or preserving kettle, and let it stand twenty-four hours. Then let it cook slowly until tender, when the fruit will be transparent. Can while it is hot. These chips may be used at lunch.

HOMINY CROQUETTES.—Have a pint of cold cooked hominy and stir it into a gill or so of hot milk. When smooth and well blended and quite cool, shape into croquettes, roll in crumbs, then in beaten egg, then in crumbs again, and fry. When brown, lay on a napkin and serve. Sometimes it will be found a delicious improvement to melt an ounce or two of any marmalade, orange or apricot, and pour round the croquettes before serving.

BROILED CHOPS.—Trim the fat and gristle from the chops and broil about ten minutes over a hot fire, turning them often, and watching that they do not smoke. Have ready a puree of potatoes made of one cupful of mashed potatoes, beaten light with one egg, one teaspoonful butter, one-half cup of milk and a sprinkling of salt and pepper. Lay the chops in a baking pan, and put one spoonful of potato on top of each; set in a quick oven long enough to brown the potato, and serve at once before it falls.

SNOW PUDDING.—Make lemon jelly with one-fourth box or one slightly rounded tablespoon granulated gelatine soaked in one-fourth cup cold water, dissolved in one cup sugar and one-fourth cup lemon juice. Strain and cool. Beat the whites of three eggs very stiff, and when the gelatine begins to thicken, combine the two, and beat with a perforated wooden spoon in a large bowl to give a wide sweep to each stroke, till very light. Pour into a wet mould or into a pretty glass dish. Serve with boiled custard poured around, if moulded, or from a pitcher if not moulded.

Hints to Housekeepers.

A delicious cake filling is made from chopped figs mixed with crabapple or apple jelly.

The cold boiled rice left from dinner or luncheon may be mixed with waffles or muffins, and will make them lighter.

Scraps of plain or puff paste trimmed from patties or pies may be sprinkled with grated cheese and made into cheese straws.

A good cement for china and glassware is made by soaking isinglass in water until soft, then dissolve it in proof spirit and add a little resin.

Naphtha is recommended by a woman who has tried it as a satisfactory cleanser of light fur. The naphtha was poured over the fur and the boa fluffed and patted until the soil was worked out. The naphtha was then pressed out by drawing the hand firmly over it, the boa shaken and hung in the air to dry.

A novel plan for protecting a dainty silk or lawn shirtwaist is suggested in an underwaist of very thin fine lawn, made with bishop sleeves gathered into dainty cuffs of lace or embroidery and a transparent choker. This can be laundered; and the outside waist is made more dressy by cutting it out to meet the decollette yoke or the underwaist.

Embossed leather can be cleaned with turpentine applied with a soft cloth. This removes the stains but slightly stiffens the leather, which must be made pliable again by rubbing briskly with crude oil. Use a very little oil and go over the piece with one of the clean cloths upon which no oil has been put, as care must be taken to get all the surface grease off to prevent soiling the clothes.

Pickles should not be made in vessels of brass, copper, iron or tin. Use only porcelain or earthenware and the very best cider or white wine vinegar. The jars should be of stone or glass, and the pickles kept in a cool, dark place, and examined at intervals. If white specks make their appearance in the vinegar draw it off, scald and add two tablespoonfuls of sugar and a few cloves. All vinegar should be scalded before using with pickles, otherwise it will not keep well.

Bad Economy.

Bad economy in the household is apt to begin at the market, where the "trimmings" of roasts and steaks are left with the butcher. The "trimmings" usually consist of not only bone, fat and tendon, but also the ends of the lean meat. Where the family is large, and the roasts weighing ten or fifteen pounds are needed, this lean meat will amount to from one-half a pound to a pound, and with the addition of the left overs in the house is as good as the most expensive cuts for dishes made of hashed meats. It is also an important addition to the soup kettle, as are also the bones and tendons, the latter furnishing the gelatine, which is the most nutritive property of the soup.

In households where the management is left to servants, enough food, as a rule, goes into the ash can to supply an ordinary family. In the chemical examination of the waste from the kitchen of a carpenter's family in Connecticut, it was found that about 7% of the total food purchased went into the garbage, and that this waste was even worse than this proportion would imply, because it contained about one-tenth of the total protein and fat. At the rate in which the nutrients were eaten in that household the protein and fat in the waste would each have supplied one man for a week. Besides this one-twenty-fifth of the total carbohydrates were found, and these were in sufficient quantity to feed a man three days. In a large number of such experiments it was discovered that the best to do families were the least wasteful.

Another fruitful cause of waste is undoubtedly overeating, and this of the two is the more extravagant, because it entails after penalties, which in numberless instances wind up with doctor's bills and funeral expenses. Sir Henry Thompson, an English physician and authority on this subject, says: "I have come to the conclusion that more than half the disease which embitters the middle and latter part of life is due to avoidable errors in diet * * * and that more mischief in the form of actual disease, of impaired vigor, and of shortened life accrues to civilized man * * * in England and throughout central Europe from erroneous habits of eating than from the habitual use of alcoholic drink, considerable as I know that evil to be."—New York Tribune.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 8, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	73⅝@72¼	74⅛@73⅛
Thursday	73 @74	73½@74⅛
Friday	74 @72¾	74⅜@73
Saturday	72½@72⅝	72⅝@72⅞
Monday	72⅝@71⅝	72¾@71¾
Tuesday	74 @72⅝	73⅛@72⅜

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday	5s 11½d	5s 11 d
Thursday	5s 11¼d	5s 11 d
Friday	5s 11⅞d	5s 11⅜d
Saturday	5s 10¾d	5s 10⅜d
Monday	5s 10⅜d	5s 10 d
Tuesday	5s 10⅞d	5s 10⅝d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	1 00⅛@——	1 05¼@1 05½
Friday	1 00⅛@——	1 05⅝@1 05¼
Saturday	——@——	1 05⅝@1 04⅞
Monday	99¾@——	1 04½@1 04⅜
Tuesday	1 00 @——	1 04¾@1 05⅛
Wednesday	——@——	1 05⅛@1 04⅞

WHEAT.

The local market has displayed very little life the current week, and has not been remarkable for firmness. At the same time, values have been better maintained than many anticipated, considering the very fair prospects in this State for coming wheat crop, and the generally slow and unsatisfactory condition of the wheat trade abroad. Current values here have been maintained more through the absence of selling pressure than on account of demand from either exporters or millers. Wheat is not going begging for custom to any noteworthy extent at the low figures ruling, although it must be admitted that the outlook for any marked improvement in prices in the near future is not at the moment encouraging. Most of the wheat now being carried in this State, and on this coast as well, is in the hands of parties who are not compelled to sell. Holders are, as a rule, of the opinion that the market is not likely to go much lower, and may be slightly better, especially if crop conditions should develop unfavorably in any considerable portion of the East or Europe. While there is nothing of latter sort now in sight, it is by no means an improbability of the next few months. The United States visible supply this week east of the Rockies showed a decrease of 1,687,000 bushels and is now reported at 46,668,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 99¾c@$1.00½.

December, 1901, delivery, $1.05⅝@1.04⅞.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at —— @ ——; December, 1901, $1.05⅛ @1.04⅞.

California Milling	$1 02½@1 07½
Cal. No. 1 shipping, alongside	98¾@1 01¼
Oregon Valley	1 02½@——
Washington Blue Stem	1 02½@1 07½
Washington Club	1 00 @1 05
Off qualities wheat	97½@1 00

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s3½d@6s4d	6s2½d@6s3d
Freight rates	40@——s	32½@35s
Local market	$0 93¾@ 97½	$0 98¾@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on April 1st and May 1st:

Tons—	April 1st.	May 1st.
Wheat	104,113	*104,697
Barley	25,743	†18,999
Oats	3,469	2,668
Corn	245	114

*Including 80,562 tons at Port Costa, 22,890 tons at Steckton.

†Including 13,209, tons at Port Costa, 2907 tons at Steckton.

Stocks of wheat in Call Board warehouses on 1st inst. show an increase of 584 tons for the month of April. A year ago there were 152,103 tons wheat in Call Board warehouses.

FLOUR.

As indicated in last issue would likely be the case, the official card rates of the local flour combine have been marked back to the old figures current for months past. Supplies are fairly liberal and are ample for immediate requirements. Considerable fleur is going outward, mainly te South America and the Orient.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

Although the market is lacking in strength, buyers do not find any very heavy quantities of barley being crowded upon them at existing low rates. Especially is this the case as regards feed descriptions, stocks of which have lately shown marked reduction, and are certain to be further decreased in the near future, as barley is not only very cheap and the lowest feed cereal now obtainable, but there is no other feed grain offering in noteworthy quantity, both corn and oats being scarce and high. Values for brewing grades did not move up materially before the last rains, nor have they changed specially since then. Trading in barley options was not very brisk the past week, nor were fluctuations in Call Board prices very pronounced.

Feed, No. 1 to choice	78¾@ 81¼
Feed, fair to good	77½@ 78¾
Brewing, No. 1 to choice	82½@ 85
Chevalier, No. 1 to choice	——@——
Chevalier, No. 2	——@——
Chevalier, poor	——@——

OATS.

Much the same conditions prevail as previously noted. Supplies are too light and prices too high for any active trading. That there cannet be much change for the next few months is indicated by the fact that there are few oats arriving from any section, notwithstanding the high prices prevailing.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 35 @1 42½
White, poor to fair	1 25 @1 32½
Gray, common to choice	1 30 @1 42½
Milling	1 42½@1 50
Surprise, good to choice	1 45 @1 52½
Black Russian	1 12½@1 30
Red	1 30 @1 45

CORN.

This market has been lately so poorly stocked that it has been difficult to name quotations. Values are still largely nominal. The business doing is of necessity largely of a retail character.

Large White, good to choice	1 35 @1 37½
Large Yellow	1 35 @1 37½
Small Yellow	1 55 @1 60
Eastern, in bulk (carload lots)	1 30 @——

RYE.

Not much doing, but it is not for lack of supplies, the demand being very limited.

Good to choice. new	80 @ 82½

BUCKWHEAT.

Market is practically bare of offerings from growers. Supplies in the hands of local millers are of small volume.

Good to choice	1 85 @2 00

BEANS.

Considering the decidedly improved crop prospects, as compared with a few weeks ago, prices for beans are being in the main very well maintained. Recent purchases by the United States Government made further decided reductions in supplies of Large Whites or Lady Washingtons, which were previously of quite limited volume. All white beans, as also Limas, are being very steadily held, owing to the exceedingly light quantities now in store. Pinks and Bayos continue to be offered at comparatively low figures, with stocks of same of fair volume. Not many Red beans on market, neither is there active inquiry for them at current rates.

Pea, fair to good, 100 lbs	4 75 @5 00
Small White, good to choice	4 75 @4 90
Lady Washington	4 00 @4 15
Butter	5 00 @6 00
Pinks	1 60 @1 75
Bayos, good to choice	2 25 @2 50
Reds	3 00 @3 25
Red Kidney	4 25 @4 50
Limas, good to choice	6 25 @6 40
Black-eye Beans	2 75 @3 00
Horse Beans	1 25 @1 50
Garhanzos, large	2 00 @2 25
Garhanzos, small	1 25 @1 75

DRIED PEAS.

Market is quiet at quotably unchanged values. Millers are for the time being fairly stocked with imported product.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

Choice Spring wools of light shrinkage, which are suitable for shipment in the grease, are in fair request at prevailing values, and there is nothing at the moment te warrant anticipating any material changes in prices during the current campaign. Scourers are doing scarcely anything at present, and there is consequently little inquiry for heavy and defective fleeces, but these are expected to receive more attention a little later on.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

The market is very tranquil, there being very few hops now remaining on the entire coast, and practically none in the hands of growers. Wholesale values are consequently poorly defined, but there is nothing to warrant changing quotations. Bids on new to arrive are mainly within range of 10@13c for desirable brands.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

Arrivals of hay since last review have not been heavy in the aggregate, but have proven sufficient for the immediate demand. Values have continued at previously queted range, but market is not noteworthy for firmness, especially for ordinary qualities. Considerable quantities of damaged hay are expected soon on market, and such will likely go at low figures.

Wheat	8 00@13 00
Wheat and Oat	8 00@11 50
Oat	7 00@11 00
Barley	6 00@ 9 50
Volunteer	4 50@ 7 00
Alfalfa	7 00@ 9 00
Stock	4 50@ 7 00
Compressed	8 00@12 50
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

Stocks of most descriptions of mill offal were not in large supply, but were a little heavier than preceding week. While tendency was to easier prices, asking figures showed no marked reduction. Rolled Barley was fairly steady at last quoted decline. Market for Milled Corn products was very firm.

Bran, ₱ ton	16 00@17 00
Middlings	17 50@19 00
Shorts, Oregon	16 50@17 50
Barley, Rolled	17 50@18 00
Cornmeal	28 00@——
Cracked Corn	29 00@——

SEEDS.

The same inactive condition as previously noted continues to be experienced in this department. Mustard Seed is practically out of stock. The prospects for coming crop of Mustard are good and much better than last season. There is little inquiry now for Alfalfa, and not much on hand. In quotable values for Bird Seed there are no changes to note.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

There is a moderate business doing in Grain Bags, with market firm at the prevailing rates. Importers and dealers are talking prospects of higher prices, as they invariably do at this time of year when crop conditions are favorable. Dealers and brokers are, however, willing to sell at current rates and let somebody else take the chances of doing better later on.

Calcutta Grain Bags, buyer June-July	7 @ 7¼
Calcutta Grain Bags, spot	6⅞@ 7
San Francisco Grain Bags, 22x36, spot	6⅞@ 7
State Prison Bags in lots of 2000, ₱ 100.5	65 @—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

Indications are that prices for Hides and Pelts have touched bedreck for the time being, but no special improvement is looked for very seen. Tallow is in very fair request at unchanged values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½@10	8 @8½
Medium Steers, 48 to 56 lbs	8½@ 9	7 @7½
Light Steers, under 48 lbs	8 @ 8½	6½@7
Heavy Cow Hides, over 50 lbs	8½@ 9	7 @7½
Light Cow Hides, under 50 lbs	8 @ 8½	6½@7
Wet Salted Kip	9 @ 9½	7 @7½
Wet Salted Veal	9½@10	7½@8
Wet Salted Calf	10 @—	9 @—
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	80	@1 00
Pelts, medium, ₱ skin	60	@ 75
Pelts, short wool, ₱ skin	30	@ 55
Pelts, shearling, ₱ skin	10	@ 30
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3	@ 3¼
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

The market is quiet and lacking in firmness. Buyers are holding back, anticipating liberal offerings soon. Dealers appeared before the Board of Health of this city. to receive sanction for the use of glucose in honey to prevent granulation, but the Board refused to take any special action.

Extracted, White Liquid	5 @ 6
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
White Comb, 1 lb frames	11 @12
Amber Comb	8 @10
Dark Comb	6 @ 7

BEESWAX.

There is not much offering and no change to note in quotable values. It is doubtful, however, if heavy quantities could be placed at full current rates.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Beef market has not changed materially since last review, although tendency has been slightly in favor of the buying interest. Veal is not arriving very freely, but there is about enough for immediate demand. Mutton and Lamb have ruled fairly steady at about last quoted range of prices. Hogs have been in fair receipt and market has inclined downward, although comparatively good prices are still being realized.

Beef, first quality, dressed, net ₱ lb	7½@—
Beef, second quality	7 @ 7¼
Beef, third quality	6½@ 7
Mutton—ewes, 6½@7½c; wethers	7 @ 8
Hogs, hard grain fed, medium	6¾@ 6½
Hogs, small, fat	6¾@ 6½
Hogs, large, hard	5⅞@ 6
Hogs, feeders	—@—
Hogs, country dressed	8 @—
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	8½@—

POULTRY.

Chickens were in better supply than preceding week, mainly due to increased arrivals of Eastern, and market presented an easier tone, but choice, large and fat stock did not lack for custom, such bringing in some instances above quotations. Desirable young poultry, while not as high as previeus week, sold to fair advantage, with no special excess of offerings. Turkeys are still out of favor with consumers. Old Ducks and Geese are not at present meeting with active inquiry. Young Ducks were scarce and higher. Pigeon market was quiet and lower, old and young going at practically same figures.

Turkeys. live hens, ₱ lb	11 @ 12
Turkeys, live gobblers, ₱ lb	8 @ 10
Hens, California, ₱ dozen	4 00 @5 50
Roosters, old	4 00 @4 25
Roosters, young (full-grown)	6 00 @7 50
Fryers	5 00 @5 50
Broilers, large	4 00 @4 50
Broilers, small	2 25 @3 00
Ducks, old, ₱ dozen	3 50 @4 50
Ducks, young, ₱ dozen	5 50 @7 00
Geese, ₱ pair	1 25 @1 50
Goslings, ₱ pair	2 25 @2 50
Pigeons, old, ₱ dozen	1 50 @1 75
Pigeons, young	1 50 @1 75

BUTTER.

Receipts are of full average volume for this time of year, but stocks are not given chance to accumulate to any noteworthy extent. The demand on speculative an packing account is absorbing the surplus and market is moderately firm at the figures quoted.

Creamery, extras, ₱ lb	17 @18
Creamery, firsts	16 @16½
Creamery, seconds	— @—
Dairy, select	16 @16½
Dairy, firsts	15½@16
Dairy, seconds	— @—
Dairy, soft and weedy	— @—

Mixed store	13	@—
Creamery in tubs	17	@19
Pickled Roll	—	@—
Firkin, California, choice to select	16	@17
Firkin, common to fair	14	@15

CHEESE.

Market is fairly stocked with domestic flats, and presents an easy tone, round lots being difficult to move at full current rates. Young Americas are not plentiful, but not many are required to satisfy the demand at the comparatively stiff prices which have been lately in force.

California, fancy flat, new	9½	@—
California, good to choice	9	@ 9½
California, fair to good	8½	@ 9
California Cheddar	—	@—
California, "Young Americas"	9½	@10½

EGGS.

Owing to less active demand on speculative and cold storage account, offerings have not in all instances moved promptly at full current rates, but for most desirable stock values have been fairly well maintained.

California, select, large, white and fresh	16	@17
California, select, irregular color & size	15	@15½
California, good to choice store	14	@14½
Eastern, as to section and grading	—	@—

VEGETABLES.

Spring vegetables of most kinds showed materially increased receipts, and the general trend of prices was to lower levels, especially on Peas and String Beans. Canners reduced bids on Peas to 1c. per lb. Old Onions continue in light stock and high. New Red Onions are arriving in moderate quantity and are offering at comparatively easy figures, but they are not in the main of desirable quality. New Garlic put in an appearance, the first arrivals bringing 5c. per lb.

Asparagus, ℔ box	75	@1 75
Beans, String, ℔ lb	3	@ 6
Beans, Wax, ℔ lb	3	@ 6
Cabbage, choice garden, ℔ 100 lbs	75	@1 00
Cauliflower, ℔ dozen	50	@ —
Cucumbers, ℔ doz	40	@ 60
Egg Plant, ℔ lb	——	@——
Garlic, ℔ lb	5	@ 10
Onions, Yellow Danver, ℔ cental	3 50	@4 00
Onions, Australian, ℔ cental	4 50	@4 75
Onions, New Cal. Red, ℔ cental	1 40	@1 60
Peas, Sweet garden, ℔ lb	2	@ 2½
Peas, good to choice, ℔ sack	65	@1 00
Peppers, Green Chile, ℔ lb	8	@ 12½
Rhubarb, ℔ box	50	@ 75
Rhubarb, Mammoth, ℔ box	1 00	@1 25
Squash Summer, ℔ box	1 00	@1 50
Squash and Pumpkin, ℔ ton	——	@——
Tomatoes, ℔ box	1 00	@1 75

POTATOES.

Old potatoes are in light stock, few coming forward at present, either from points in this State or from Oregon. Supplies at producing sections are undoubtedly light, as the season is nearly ended, and if there were stocks of any consequence remaining the stiff prices lately ruling would certainly bring the potatoes forward. Most of the old potatoes on market this week were in the hands of three firms, having been purchased by them at supply points, and were held and quoted at higher figures than could have been realized on consignments. New potatoes are in only moderate receipt and are not expected in large quantity much before the 1st of July. Sweets were offered freely for this late date and at easy figures.

Burbanks, River, ℔ cental	85	@1 25
Burbanks, Petaluma-Tomales, ℔ ctl.	1 00	@1 30
Burbanks, Oregon, ℔ cental	1 30	@1 65
Early Rose	——	@——
Garnet Chile, ℔ cental	——	@——
Peerless, ℔ cental	——	@——
New Potatoes, ℔ cental	1 50	@2 50
Sweet Potatoes, Yellow, ℔ cental	60	@ 75

The Fruit Market.

FRESH FRUITS.

There were further arrivals of Blackberries this week from Los Angeles district, selling mainly at $2 per 15-basket crate. Northern California Blackberries are beginning to come forward from Newcastle, first sales being made Tuesday at $2.25 per crate. Pringle Apricots arrived to-day (Wednesday) from Vacaville, and, although not ripe, sold at $1.50 per 18-pound box. Cherries arrived quite freely and sold at a decline, with market especially weak for defective stock, and a large proportion of offerings of this sort. Strawberries sold at a wide range, with a great difference in quality of arrivals, many being soft, dirty and decidedly undesirable. A carload of Ben Davis Apples from Chicago is announced near at hand. That they will meet with a very appreciative market is doubtful. California and Oregon Apples are still offering out of cold storage.

Almonds, Green, ℔ box	50	@ —
Apples, fancy, 4-tier box	1 75	@ 2 25
Apples, good to choice, ℔ 50-lb box	1 00	@ 1 50
Apples, common to fair, ℔ 50-lb box	——	@ ——
Apricots, Pringle, ℔ box	75	@ 1 50
Blackberries, ℔ crate	1 75	@ 2 25
Cherries, Black, ℔ box	50	@ 75
Cherries, White, ℔ box	35	@ 50
Strawberries, Longworth, ℔ chest	8 00	@10 00
Strawberries, Large, ℔ chest	5 00	@ 6 00

DRIED FRUITS.

A more quiet market for cured and evaporated fruits than during the current week has not been experienced at any previous date since the season opened. There are no evidences of activity in dried fruits of any description, a condition which is not at all uncommon for this time of year. To aid in the dullness, most kinds are in rather limited supply, Prunes being about the only noteworthy exception, and holders of Apricots, Apples, Figs, Peaches or Pears of high grade are not crowding such stock to sale at figures which would be apt to prove temptingly low to buyers. While the market is a weak one to sell on, where custom has to be sought, it is by no means so weak where buyers are in quest of snaps or decided bargains. Jobbers are the main holders and they are not showing inclination to sacrifice goods to any noteworthy extent; at the same time they are not in the market as buyers at what can be termed firm figures. Quotations are nominally unchanged, and while these prices could not be realized on forced sales, the same or more would have to be paid for the kinds above noted if free purchases were being made. As to Prunes, while they are being quoted on a 3c basis, the bulk of the business doing, which is not very extensive, is at a lower range of values. Some assert that even Association Prunes are to be had for less than official figures. Certain it is that there are not many Prunes changing hands in this center at full schedule rates, although they may prove a bargain at firmer prices than now quoted before the crop of 1901 comes upon the market.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6	@ 6½
Apricots, Royal, choice, in sacks, ℔ lb	7	@ 7½
Apricots, Royal, fancy	——	@—
Apricots, Moorpark	9	@10
Apples, in 50-lb boxes, rings, pressed, fancy	4½	@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	3	@ 4
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5½	@ 6
Peaches, unpeeled, choice	4	@ 4½
Peaches, peeled, in boxes	11	@14
Pears, unpeeled Bartletts, halved, fancy	5	@ 6
Pears, halved, unpeeled Bartletts	3	@ 4
Pears, quartered, unpeeled Bartletts	3	@ 4
Plums, Black, pitted	4	@ 5
Plums, White and Red	5	@ 6
Prunes, Silver	4½	@ 6

COMMON SUN-DRIED.

Apricots	4	@ 5
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	2	@ 3
Figs, White	2½	@ 3½
Peaches, unpeeled	3	@ 5
Pears, prime halves	2	@ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

In seeded raisins there is a fair movement at the slightly improved rates recently established for this description, but beyond this there is nothing of consequence doing in this department. The official price list of the Growers' Association remains throughout as previously noted.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Debesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—
(Usual advance for fractions.)		
Loose Muscatel, 4-crown standard, ℔ lb	—@ 7	
Loose Muscatel, 3-crown	—@ 6½	
Loose Muscatel, 2-crown standard	—@ 6	
Loose Muscatel, seedless	—@ 6½	
(Above prices for loose raisins are for 50-lb boxes.)		
Seeded Raisins, 1-lb packages, ℔ lb	5¼@—	

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9¼c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Oranges are in liberal supply, with demand on the decrease on account of early deciduous fruits and berries being on the market. Values for choice to select Navels were tolerably well maintained at unchanged rates, but all defective stock moved slowly at low and irregular prices. Lemon market was quiet but fairly steady for best qualities, while for the lower grades there was scarcely any inquiry. Limes were in good supply and remained quotably as last noted.

Oranges—Navel, ℔ box	1 25	@2 25
Seedlings, ℔ box	75	@1 25
Tangerines, ℔ box	75	@1 25
Grape Fruit, ℔ box	75	@1 50
Lemons—California, select, ℔ box	1 75	@2 00
California, good to choice	1 50	@1 75
California, common to fair	75	@1 25
Limes—Mexican, ℔ box	4 50	@——
California, small box	——	@——

NUTS.

The Almond market shows a firm tone, but there is very little doing at present. There are not enough Walnuts offering to admit of quotations. Values for Peanuts remain as last quoted, with stocks light and demand fair.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@14
California Almonds, soft shell	10	@12
California Almonds, hard shell	6	@ 7
Peanuts, California, fair to prime	4½	@ 5½
Peanuts, Eastern, hand-picked	5½	@ 6
Pine Nuts	5	@ 6

WINE.

The wine market has developed no new features since date of last review. Stocks are almost wholly in second hands, and in consequence wholesale values are largely nominal, quotations for dry wines of last year's vintage remaining at 22@25c per gallon. A quiet market is looked for until coming crop begins to come forward. Considering the comparatively firm prices prevailing, and the limited quantities of wine now offering, there is a fair movement outward, both by sea and rail.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	164,946	5,611,707	5,497,860
Wheat, centals	163,506	7,052,108	5,878,050
Barley, centals	57,686	3,421,758	4,791,773
Oats, centals	3,170	591,260	712,669
Corn, centals	3,140	100,439	123,506
Rye, centals	1,070	112,042	96,452
Beans, sacks	1,758	534,414	352,634
Potatoes, sacks	17,152	1,395,928	1,109,277
Onions, sacks	2,203	159,222	144,404
Hay, tons	1,894	143,409	138,560
Wool, bales	6,338	47,470	48,196
Hops, bales	...	8,234	10,054

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	139,368	3,266,782	3,751,322
Wheat, centals	144,433	6,733,462	5,236,735
Barley, centals	34,688	1,952,109	3,784,229
Oats, centals	...	48,433	43,414
Corn, centals	...	3,172	18,077
Beans, sacks	211	12,980	25,117
Hay, bales	37	85,737	127,657
Wool, pounds	...	1 031,218	4,324,433
Hops, pounds	771	540,847	1,009,526
Honey, cases	41	1,799	3,526
Potatoes, pack's	243	128,794	69,473

California Dried Fruit at New York.

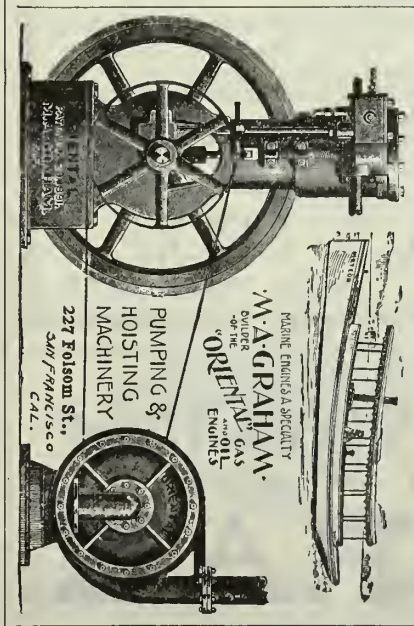
NEW YORK, May 8.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Market inactive at nominally unchanged values.

Prunes, 3¼@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.



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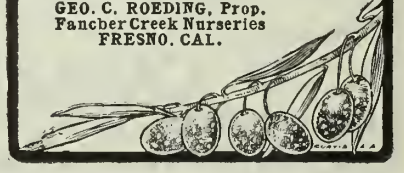

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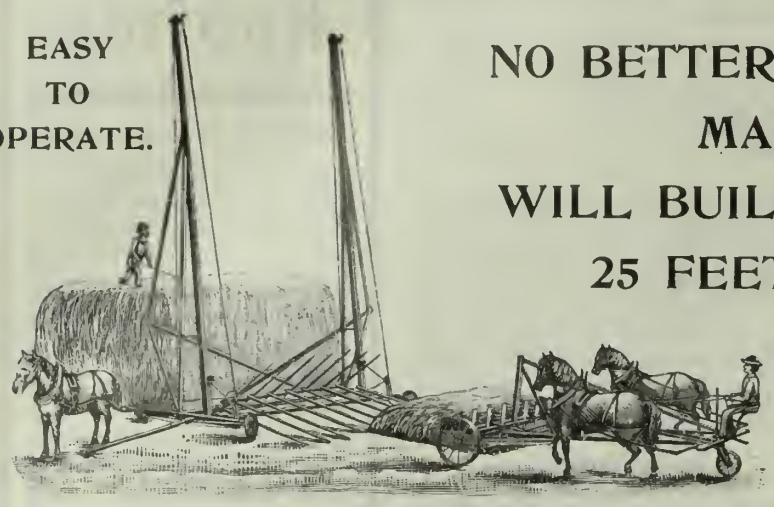

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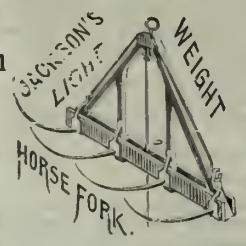

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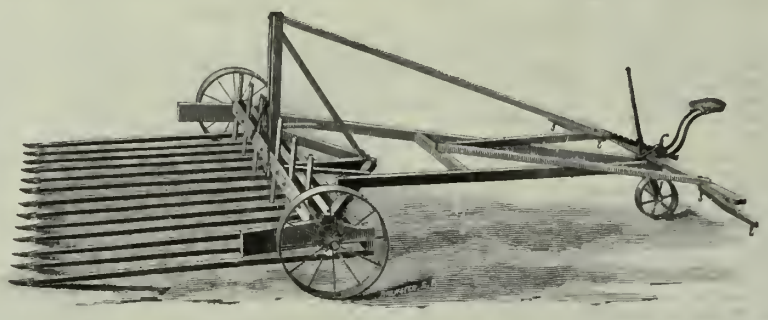

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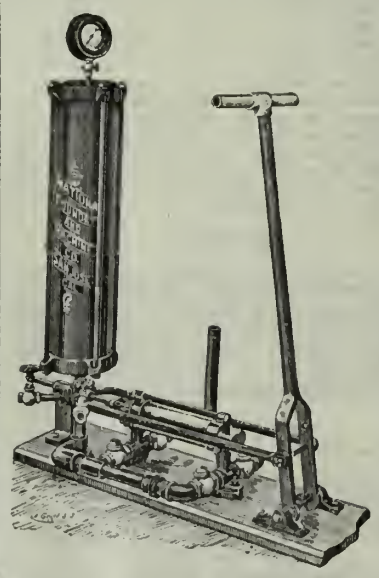

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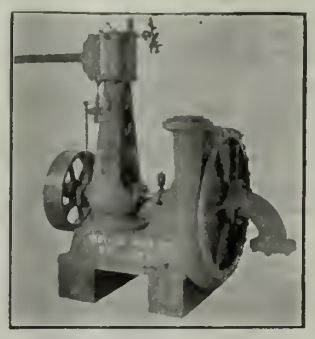

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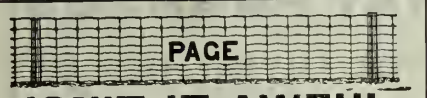

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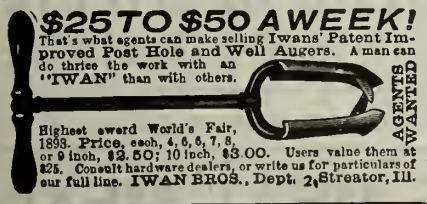

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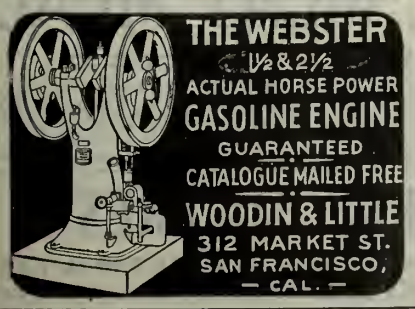

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How to Walk.

On analysis all methods of walking will be found to correspond to three main types. The first of these is the flexion or bent-knee gait, which is used by all uncivilized sandalled or moccasined nations, and also by all persons who are obliged to walk long distances in the shortest possible time over uneven ground. This gait has recently been officially adopted in some European armies on account of its convenience for prolonged marching. In this mode of walking the body always leans forward to a considerable degree, the knees are always held slightly flexed, and the whole sole of the foot comes down to the ground at the same instant. This oblique position of the body, this elasticity of the bent knees and this perfect play of the arch of the foot makes propulsion easier, the expenditure of energy becomes less in consequence, and the endurance of the walker is enhanced in proportion. Yet, this flexion gait is not graceful, and not adapted for women except on long walking tours.

The second type of walking is the straight leg gait of the soldier on parade. In this walk the body is held erect, the forward foot is fully extended and strikes the ground with the heel first, the ball of the foot coming down next, the other foot swinging in perfect cadence in front of the first, the heel again striking the ground first, etc. There is no question that this gait, however admirable it may be from a military point of view, does not conform to the standard of womanly grace. For this reason, and in compliance with the principle that abhors all jerky motion, I would discourage the teaching of marching in girls' schools and colleges. As a rule, the result is very ungraceful, the lines of thumping, shoulder shrugging girls walking at a swing cadence to the stirring strains of martial music being anything but edifying.

The third type is the gait of the pedestrian on the well graded surfaces of our city streets. The great toes should move in parallel lines, pointing directly forward; for while the outward pointing of the toes is normal in the passive standing attitude it is not normal when the foot is in action. The walk with toes pointing out has been thoroughly inculcated into most of us by nursery maids, governesses and dancing masters, and is the most potent factor in the causation of flat foot. The foot should be placed on the ground with the ball of the foot, not with the heel, first, in order to give full play to the arch. The knees should be very slightly bent, just enough to lift the foot from the ground as the limb swings forward. The spine must be mobile, so as to compensate by a slight rotation for the lateral movement of the pelvis at each step. The length of the steps must be regulated according to the length of the pendulums represented by the lower limbs. The arms must swing slightly with each step, the movements being greatest at the extremity of the limb and almost imperceptible at the shoulder.—New York Medical Review.

Improved 20th Century Separators.

We have received from the De Laval Separator Co. a copy of a very neat pamphlet they have just issued, giving descriptions and illustrations of the many styles of separators which they are now offering to the dairy public. The statements seem to us very explicit and interesting and the style of the publication is very attractive. All looking toward improved dairy appliances should have this catalogue.

A Business Change.

Messrs. N. Ohlandt & Co., Indiana & Yolo Sts., San Francisco, have purchased the Poultry Food business of the Emery Fertilizer Co. and will continue the manufacture of their Pure Poultry Foods and maintain the standard of purity which has given the goods such wide reputation. Mr. A. L. Emery, who has heretofore had the management of the business, will take charge of the Poultry Food Department for Messrs. N. Ohlandt & Co.

Deafness Cannot Be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that can not be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

Hall's Family Pills are the best.

Curb, Splint,

contracted cord, thrush, grease heel and all forms of lameness yield readily to

Tuttle's Elixir.

Used and endorsed by Adams Express Co.

Reading Trotting Park, Mass., Aug. 31, 1899.

Dr. S. A. Tuttle, V. S.

Dear Sir:—I want to add my testimonial to your list recommending Tuttle's Elixir for curbs, broken tendons, thrush, and nails in the feet. I have used it on all of these cases many times, and never failed to make a cure. J. H. NAY.

Given internally it is sure cure for Colic, Distemper, Founder, Pneumonia, etc.

TUTTLE'S FAMILY ELIXIR cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience," FREE.

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Beware of so-called Elixirs—none genuine but Tuttle's. Avoid all blisters; they offer only temporary relief if any.

$25.00 For a Name.

There is only one perfect fig raised in this country.

It was originated by me and is the Original California Smyrna Fig.

I want a name for it and will pay $25.00 to the person submitting the most suitable name.

The name will be trade-marked and will be used on the boxes of dried figs. It should, therefore, indicate the contents of the package and suggest its superiority.

To trade-mark a name it must be a coined word which does not specifically designate the contents of the package.

Now, get your thinking cap on; coin a catch word and earn $25.00. There are no conditions; it costs absolutely nothing to compete.

All answers must reach me by the 25th of May, 1901. Address

GEO. C. ROEDING,
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Room 7, Competition Dept. FRESNO, CAL.

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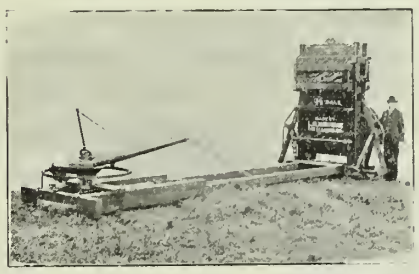

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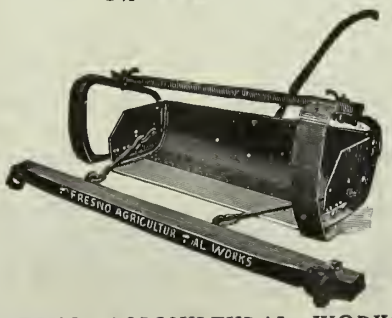

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MEYER, WILSON & CO., San Francisco, Cal. are Sole Agents for the Pacific Coast.

THE NEW IMPROVED Fruit Cutting and Pitting Machine

Is Practical in All Its Workings.

It cuts the fruit entirely round and pits it more carefully than it can be done by hand. The work is done with wonderful rapidity, six pits being extracted at each revolution of the wheel, whether the fruit be large freestone peaches, or plums of the smallest size. It is capable of handling

One Ton of Apricots Per Hour.

Thousands of tons of apricots have been satisfactorily cut and pitted with these machines.

It Does Not Push the Pit Through the Fruit,

but holds the pit firm while the fruit is carefully removed without being bruised—the pits are delivered separate from the fruit.

The Advantage of This Machine is Very Apparent,

as one machine and one man practically represent fifteen or eighteen cutters. This perfect machine, which is guaranteed, is the result of ten years experimenting and improving. These machines will be rented for the fruit season for $50 each; for sale at $150 f. o. b. Los Angeles. If it is not satisfactory after two days' trial it can be returned and the money refunded. Address

J. SMITH BRIGGS,
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Improved Fresno Scraper.

5-FOOT. WEIGHT, 300 LBS.

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BLAKE, MOFFITT & TOWNE, Los Angeles.
BLAKE McFALL & CO.....Portland, Or.

Patrons of Husbandry.

At Oakland Grange.

TO THE EDITOR:—Saturday evening, April 27th, Oakland Grange gave a birthday surprise to Mrs. A. T. Dewey, at her home on Franklin street. The young ladies assembled in the afternoon and decorated the house with bamboo, pepper branches, callas and a profusion of roses.

After a presentation speech by Mr. J. M. Moore and a fit response from the guest of honor, the following programme was ably rendered:

Piano duet, Miss Helen Bacon and Miss Anita Dewey; humorous reading, Mrs. S. J. Cross; piano solo, Miss Helen Bacon; recitation, Mrs. Miller; vocal solo, Mrs. N. K. Foster; reading, Mrs. Charles Emery; vocal solo, Miss Helen Bacon.

After a very amusing game entitled the animal game was played, the guests repaired to the dining room where a dainty luncheon was served.

Saturday evening, May 4th, a birthday surprise was held in the Grange hall in honor of the Worthy Secretary, Mrs. N. G. Babcock and Miss May Gilbert. The hall was beautifully decorated with bamboo and roses by the young ladies. The Worthy Gatekeeper, Mr. D. T. Fowler, was duly installed, after which the third and fourth degrees were conferred on Mr. and Mrs. Miller. After a short musical and literary programme a dainty collation was served.

The ladies of Oakland Grange have formed themselves into a literary club, which meets every Tuesday afternoon at the different members' houses. We have taken up the study of forestry and have finished the first edition of the forestry primer. The officers of this club are Mrs. D. T. Fowler, president, and Miss A. M. Dewey, secretary. The roll is called at every meeting and each responds with an appropriate selection.

Oakland, May 4. NITA.

THE VETERINARIAN.

Answers by Dr. Creely.

SHOULD BE TESTED FOR TUBERCULOSIS.

TO THE EDITOR:—Our fine Jersey cow was every way in good condition, well fed and milking heavily until her calf was two months old, when we took it from her altogether. She mourned its loss much and long. Then she began to droop and refused her feed off and on and finally would not eat at all. Her milk ceased and she would simply stand around listless and wasting away. By this time her passages were scant, slim and mere chips covered with mucous. She became so feeble that we fed her daily from a bottle with a porridge of new milk and ground flaxseed and succeeded in moving her bowels with linseed oil, and also gave her a tonic. She began to mend slowly and eventually regained herself, gave a fair amount of milk, took her feed, gained flesh, seemed bright, even playful, was served by the bull and we counted all trouble with her over. Lately, however, she has gone through the exact same phases again. She shows no pain that we can discover, is more inclined to stand than to lie down. She seeks a quiet place and stands or lies, eating nothing and becoming emaciated—this, too, in the midst of the green grass season. Her feed has been the best of mixed alfalfa and orchard grass hay, bran and pasture. A half dozen other cows on the same feed are as well conditioned as can be. At this writing we have administered oil. Will Dr. Creely please advise?—SUBSCRIBER, Shasta Co.

Try her with the Pasteur tuberculin test; report results later on. Continue your flaxseed gruel, but give no medicine for the present.

TREATMENT FOR LEG INJURY.

TO THE EDITOR:—Will you please give me through your valuable paper a remedy for a lump on the upper part of the fore leg, next the body, caused by the hoof or shoe? I removed the shoe and bathed the lump with vinegar and salt, but it seems not to diminish.—JOHN HILFIKER, Eureka.

Apply the following plaster: Biniodide mercury 1 part, vaseline or simple cerate 6 parts. Clip the hair and apply thoroughly. Do not let him lie down until the soreness from the blister has disappeared. Also shoe with tips.

DR. E. J. CREELY.
510 Golden Gate Ave., S. F.

San Francisco Veterinary College.

This institution, of which our veterinary contributor, Dr. E. J. Creely, is president and professor of theory and practice of veterinary medicine and surgery, will open its third session on June 10th. Catalogues can be obtained by addressing M. L. Pancoast, 510 Golden Gate avenue, S. F.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR WEEK ENDING APRIL 23, 1901.

672,691.—SAW SHARPENER—G. Y. Anderson, Dyea, Alaska.
672,662.—DESK TELEPHONE—A. K. Andriano, S. F.
672,816.—HAIR FASTENER—Lottie Bassett, Cedarville, Cal.
672,438 —TRICYCLE—F. E. Black, Bellemont, Ariz.
672,869.—BOLT CUTTER—S. S. Bolsinger, Brockway, Or.
672,475.—ARTESIAN WELL PACKING—F. Cavallaro, San Jose, Cal.
672,494.—LOCK—P. V. Cornils, Seattle, Wash.
672,598.—PIPE COUPLING—W. F. Drew, Sacramento, Cal.
672,524. — AMALGAMATOR — Ghiglieri & Schofield, Stockton, Cal.
672,485.—DISK HARROW—J. Lindstrom, San Jose, Cal.
672,737.—WRENCH—Mahana & Pompe, Toledo, Wash.
672,739. — AMALGAMATOR — L. Mayhew, New Whatcom, Wash.
672,740. — AMALGAMATOR — L. Mayhew, New Whatcom, Wash.
672,453.—FRUIT GRADER—S. McGarvin, Fresno, Cal.
672,801.—LOOMS—J. H. Northrop, Tustin, Cal.
672,537.—PUMP—C. L. Parker, Los Angeles, Cal.
672,517.—SAW SET—J. Wesely, Scio, Or.
672,470.—WELL DRILL—E. D. Wolbert, Bakersfield, Cal.
672,518.—MAIL BOX—W. D. Wright, Saticoy, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

DISK HARROWS.—No. 672,485. Dated April 23, 1901. J. Lindstrom, San Jose, Cal., three-quarters assigned to Farmers' Union, same place.

In this invention gangs of disks are mounted on standards depending from pivotally mounted horizontally turnable bars, and draft rods extend upwardly and forwardly from the lower part of the standard. Levers are pivotally secured between their ends having opposite ends connecting with the draft rods. The slidable crosshead between the gangs and connections between the crossheads and the inner ends of the levers serve to simultaneously turn the gangs with relation to each other.

EXPANSIBLE PACKING ATTACHMENT FOR ARTESIAN WELLS.—No. 672,475. Dated April 23, 1901, F. Cavallaro, San Jose, Cal.

Within the casing of the well and between it and the suction pipe is an annular bag encircling the pipe having a reinforce bottom and expansible sides. Pipes enter the bag and adjustably suspend it at any depth below the surface. These pipes are adapted to transmit a fluid pressure to the bag to distend the sides and form a tight seal between the suction pipe and the casing. When water is being pumped a vacuum is formed below this packing bag and the air pressure thus produced in the surrounding strata causes an increased flow of water into the well.

WELL-DRILLING ATTACHMENT.—No. 672,470. Dated April 23, 1901. E. D. Wolbert, Bakersfield, Cal.

This invention relates to well-boring drills, sand pumps and like apparatus, and its object is to provide a means for slowly raising the drill or other part and then allowing it to drop more suddenly so as to penetrate the material through which it is passing, and when used in conjunction with a sand pump the sudden dropping of the pump causes it to agitate and stir up the material and thus fill the pump bucket. It consists of a fulcrumed lever, a pulley carried at the outer end, over which the drill rope passes, a revoluble cam, a slide movable upon the pulley carrying lever which is engaged by the cam, and means fulcruming the slide adjacent to the lever so that the latter is moved about its fulcrum, and the outer end caused to travel at different rates of speed. In conjunction with this is a latching device whereby the lever and pulley may be retained out of contact with the cam when desired.

BLACK LEG ...VACCINE.

During the past two years our vaccines have been used on several thousand head of cattle in the worst infested districts of California and with the best of results, giving entire satisfaction and proving an exceedingly profitable investment to the stock owner.

Every lot is tested and found reliable before a single dose is put on the market.

Write for literature and testimonials.

The Cutter Analytic Laboratory,
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Publishers of the "Pacific Coast Poulterers' Hand-Book and Guide." PRICE 40c.

Manufacturers of Pacific Incubator and Brooder, Send for Catalogue.
OAKLAND POULTRY YARDS,
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COTSWOLD RAMS.

Eighty head of imported Cotswold Rams for sale.

May be seen at Crows Landing on San Joaquin river. For mutton lambs they are unexcelled.

Inquire of KIRKPATRICK & WHITTAKER, Stockton, Cal.

JUST AS NATURAL as the old hen and a good deal more reliable. Doesn't break its eggs or make its chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched. **THE PETALUMA INCUBATOR** is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 54 to 324 eggs. WE PAY FREIGHT ANYWHERE in the U. S. Handsome catalog free. Petaluma Incubator Co., Box 217 Petaluma, Cal.

Elgin Watches sold by jewelers everywhere in various sizes and styles. Prices to suit. Send for free booklet. Elgin National Watch Co., Elgin, Ill.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

POULTRY.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

FOR THOROUGHBRED FOWLS in small lots, address Cottonwood Farm, Pleasant Grove, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

MEAT MEAL. Best quality. Lowest price. A. Warren Robinson, Napa, Cal.

SWINE.

S. P. LINDGREN & SONS, Kingsburg, Cal. For sale, Poland-China pigs from registered stock.

BERKSHIRE HOGS, headed by the great boar Artful Lee 52630. S. B. Wright, Santa Rosa, Cal.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

THOS. WAITE, Perkins, Cal. Breeder Reg. Berkshires. Sweepstakes State Fair and Tanforan, 1900.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs.

SHEEP.

R. H. CRANE, Santa Rosa, Cal. Breeder and importer of South Down Sheep.

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POULTRY supplies of all kinds. Send for my new price list and booklet, "HOW TO FEED FOWLS FOR PROFIT." CROLEY, 508 Sacramento St., San Francisco, Cal.

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THE LYNWOOD HERD OF SWINE

is still in the lead. Reports from the THREE GREAT FAIRS of the Pacific coast show that after meeting the best herds in California, Oregon and Washington, we can rightfully claim to have the **Champion Herd** of the coast. Look at the record: California State Fair, 15 ribbons; Oregon State Fair, 13 ribbons; San Francisco and San Mateo Fair, 20 ribbons, making a total of 53 ribbons. Our large sales to visitors to the fairs show what they thought of the stock, and we have very few salable pigs left. If you are in need of stock, write us and we will describe what we have.

SESSIONS & CO., 117 E. 23rd St., Los Angeles, Cal.

EMERY'S PURE MEAT MEAL

FOR POULTRY.

We have put in new machinery especially adapted for the manufacture of this Pure Meat Meal. Our stock is received fresh every morning and in five hours it is sacked and ready for shipment. Ours is the *only genuine odorless* Meat Meal on the western market. Sample free. Try it for your poultry.

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Nitrate of Soda as a Fertilizer.

CROP FAILURES

are practically impossible where **NITRATE OF SODA** is used as a fertilizer. Its use has made an exact science of crop growing. You can always rely upon a good crop when it is used singly or in proper combination with other elements of plant foods.

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Write to them for pamphlets.

DE LAVAL CREAM SEPARATORS.

The De Laval Cream Separators have ever been the best of separators. They were the original and have led in every stage of development. The "Alpha" disc invention is restricted by patents to the De Laval machines only. The 20TH CENTURY improvements give them still greater capacity and efficiency. They are as much superior to the best of other separators as such machines are to setting methods.

All sizes, styles and prices —$50.– to $800.–

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CREAM SEPARATORS

The **REID** is guaranteed in every respect. Send for catalogue No. 14. Trial free.

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GLENN RANCH,

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FOR SALE

In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

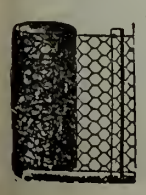
Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

DEWEY, STRONG & CO'S PATENT AGENCY.

Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, thorough system, intimate acquaintance with the subjects of inventions in our own community, and our most extensive law and reference library, containing official American reports, with full copies of U. S. Patents since 1872. All worthy inventions patented through DEWEY, STRONG & CO.'S Patent Agency will have the benefit of a description in the *Mining and Scientific Press*. We transact every branch of patent business, and obtain patents in all countries which grant protection to inventors. The large majority of U. S. and foreign patents issued to inventors on the Pacific Coast have been obtained through our agency. We can give the best and *most reliable* advice as to the patentability of new inventions. Our prices are as low as any first-class agencies in the Eastern States, while our advantages for Pacific Coast inventors are far superior. Advice and circulars free.

330 MARKET ST., SAN FRANCISCO, CAL.

And 918 F Street, N. W., Washington, D. C.



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Wire Cloth, Prune Dippers, Graders, Etc.

West Coast Wire & Iron Works, 5 Fremont St., San Francisco.

THE DAIRY.

Variations in Milk Tests.

W. J. McNulty, manager of the San Joaquin Creamery at Fresno, has issued a circular to his patrons containing these statements, which should have a wide hearing:

Why milk tests vary is a matter that has been given a great deal of thought and consideration at the U. S. Government experiment stations. We know that tests do vary and that there are a thousand and one reasons why they vary. Just how the green feed of the pasture is turned into milk by the cow scientists are unable to determine. It is no doubt done by some machine-like process by the cow; but you must take into consideration that the machine is a living machine, which is susceptible to changes in weather, difference and variation in feed and water, that she has feelings and a nervous system, and, if she be a thoroughbred animal, that the least excitement will so affect her that she will refuse to let down a drop of milk. By patience and kindness she may be induced to part with her milk, but if that same milk was to be tested you would discover immediately that almost all of the butter fat had been lost. This fact alone shows how important it is that cows should be treated with the utmost kindness, and that the comfort and well-being of the cow should receive the utmost thoughtful and considerate attention.

Just recently a case has come to our notice that we could hardly understand. The milk of a cow was tested and it was found to be about 13%. This test was so high and remarkable that an investigation was made, and it was later learned that the normal test for this cow was about 5%. If a cow happens to be tested during a time when she is in a feverish condition, the test then will be found to be abnormally large. This is for the reason that the fever is worked off through the milk glands, and the result is a great excess of butter fat.

I recently had occasion to visit a large dairy. The cows were milked in the open fields without the use of stanchions, and a dog was used to drive them to the corner where they were milked; during the process of milking more or less of the cows were continually straying away, and as they were needed the dog was sent to fetch them. The result of this whole proceeding, as I explained to the owner at the time, was that he was sowing broadcast over that big field silver dollars that were forever lost.

The variation of the quality of milk during one milking is very marked. The first taken from the cow is almost destitute of any butter fat, and as the milking proceeds the milk becomes richer in butter fat, so that at last the milk is as rich as cream. This fact in itself shows the importance of carefully and conscientiously stripping the cow.

Every drop of this last milk counts. So long as a single drop can be obtained it is worth the time and trouble.

Saved $75 Cow at Cost of Only $2.—Kendall's Spavin Cure Did It.

FLOYD KNOBS, IND., April 20, 1901.

Dr. B. J. Kendall Co., Enosburg Falls, Vt.

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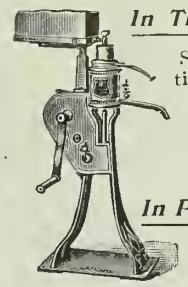

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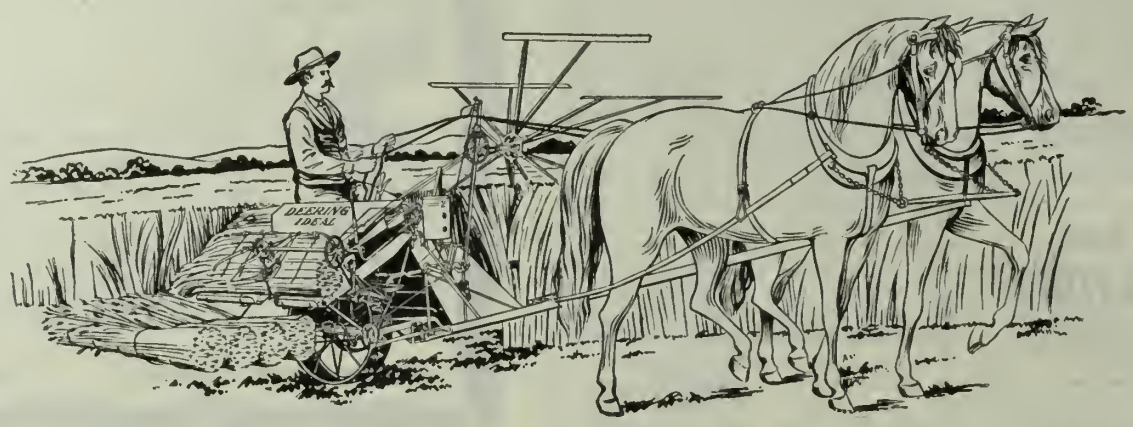

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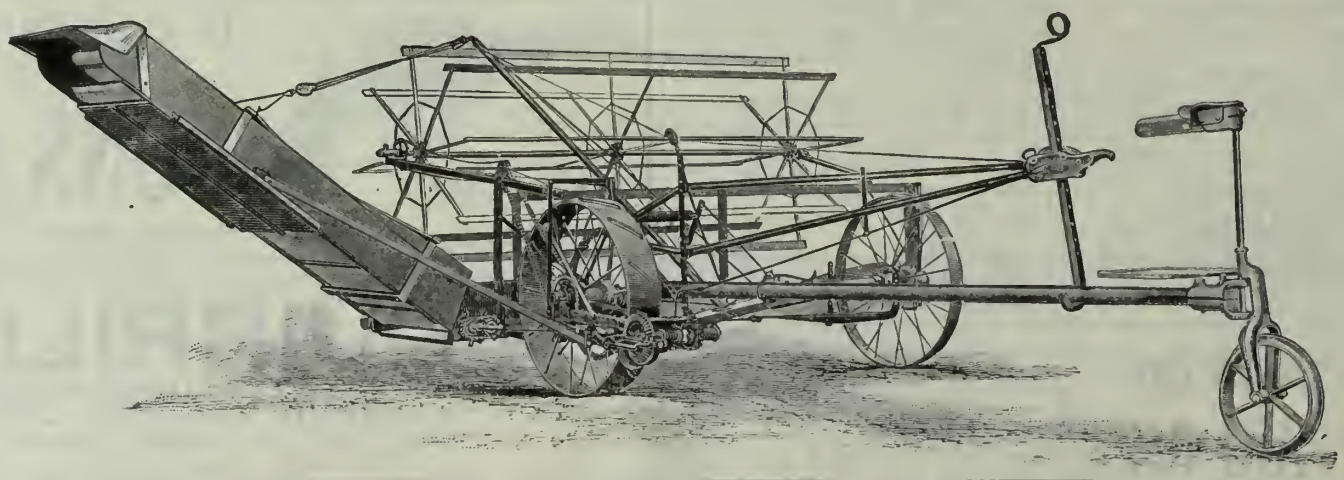

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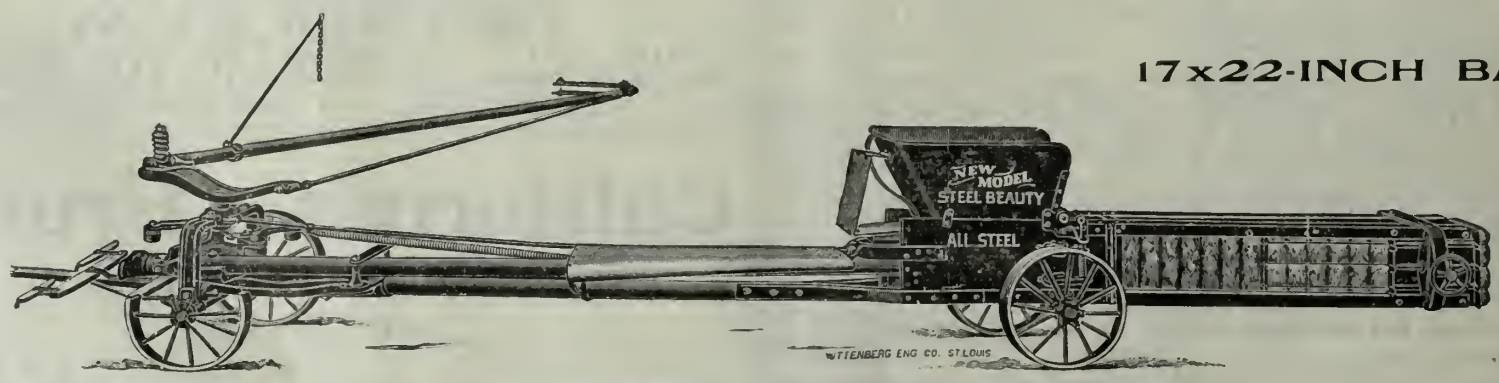

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Vol. LXI. No. 20. SAN FRANCISCO, SATURDAY, MAY 18, 1901. THIRTIETH YEAR Office, 330 Market St.

The Presidio.

We have a view of San Francisco which probably not one resident of the city in a hundred would recognize as one of his home scenes, and it is fair to presume that it will be a novel scene to the occasional visitor. It is, however, a prominent point in the city, geographically, historically and otherwise, for it represents the Presidio of the old Mexican regime and the early war establishment of the Americans, and is still the chief military reservation and outfit of the United States on the peninsula. The picture was taken while the massing of troops for transport to the Philippines was in progress, and the camps serve to make the scene strange even to those who know the open fields and eucalyptus groves of the region. Geographically, the picture is of interest because it shows the extreme westward arm of the bay of San Francisco, which reaches out to the Golden Gate, the narrow strait which is closed from view between the nearer and farther hills in the upper left-hand corner of the picture. Across the water are the hills of Marin county, which rise northward until they reach their highest uplift in the summit of Tamalpais—the nearest mountain to the metropolis which can claim an altitude of 2500 feet. To the city resident who enjoys an outing the wildness of the dense Presidio forests of eucalyptus is a charm contrasting with the more open woods and superior horticulture of the Golden Gate Park.

The Presidio of San Francisco Looking Northward Across the Golden Gate.

In the Olive Orchard.

The view of olive picking in a San Joaquin valley orchard is characteristic of a branch of horticulture in which California has practically a monopoly on American soil. The picture shows well the peculiar shape and foliage of the tree and its manner of bearing when it consents to yield a full return, which it does not always consent to do in this State, as many planters have ascertained to their regret. The olive does, however, bear well in some localities, and nowhere, so far as we know, has its cropping been heavier or more regular than in the Fresno region. There are also places in the Sacramento valley where it is fruiting well and found profitable. The same is true also of some of the coast regions. The picture is therefore quite widely characteristic both in the aspect of the trees and the vessels in which the fruit is being gathered. It must be remembered, however, that the olive has, in many places, proved a serious disappointment, though all the reasons therefor do not yet appear clearly.

Fruit Gathering in an Olive Orchard in the San Joaquin Valley.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, May 18, 1901.

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The Week.

The great event of the week is the visit of the President and his associates. It began duly in southern California, proceeded satisfactorily until nearly half the State was traversed, but then was seriously disarranged by the serious illness of Mrs. McKinley. This lamented occurrence has forced a practical abandonment of about half of the events planned for the metropolis and vicinity and promises to cut out altogether the Northern route. As we go to press (on Wednesday afternoon) it looks as though the President might soon start for Washington by the most direct route. It is a serious disappointment to the people of the Pacific coast, and the occasion of it is most deeply deplored.

Wheat is changing hands very slowly; bids show a reduction of 25@50c per ton. Two large cargoes, aggregating nearly 9000 tons, went afloat this week for Europe, reducing spot holdings of exporters. Barley is lower for feed descriptions and weak at unchanged values for higher grades. Oats are without new feature, continuing scarce. Jobbing prices for corn have been again marked up, and not much obtainable at the higher figures. Beans are not receiving much attention, but there is no weakness for other than Pinks and Bayos. Millstuffs market shows steadiness for all descriptions. New grown hay is arriving in moderate quantity and is selling fairly well. Beef and mutton are going at practically unchanged rates. Hogs are lower; more arriving, both local and Eastern. Butter values are ruling steady. Cheese market is quiet but not quotably lower. Eggs have been dragging; restaurant keepers and boss bakers have been buying slowly on account of trouble with their help. Poultry market was lower for most kinds, and especially weak for small young and common old. Potato market has inclined against buyers, but no advance in quotable rates. Onion market is steady for choice old, but weak and lower for new red. Oranges of high grade have been doing a little better; common are cheap as ever. No improvement observable in lemon market. Limes are cheap. Cherries arrived in better condition and brought better prices. Blackberries, raspberries and currants were here in sufficient quantity to give the Presidential party a taste. Strawberries were more plentiful, some coming from Sacramento. Choice dried fruit of most kinds is tending upward in price, supplies of this sort being light; no scarcity of common. Prunes are moving slowly at generally unchanged figures. Wools are passing out of growers' hands about as rapidly as shippers and scourers can handle them.

The regents of the University of California have approved the plans for the beginning of dairy school work on a plan which is within the means that they can devote to this purpose, viz., $10,000 for the coming fiscal year. The plant is to be installed in the basement of the Agricultural Experiment Station, where quite capacious rooms can be prepared for practical instruction in milk testing, etc. Suitable dairy barns for the housing of the cattle which are to be purchased are to be erected on the University property in Strawberry canyon. The pasturage problem has been solved by a plan to use the hill land of the campus for grazing grounds, in connection with adjacent leased lands for growing forage and silo crops. Of the amount stated above $6600 is to be expended for equipment and $3400 for operating expenses. The money becomes available for the year commencing July 1st. Though this may not be as great a dairy school as some have desired, it should not be forgotten that Eastern legislatures make special appropriations of perhaps five times as much and are naturally able to do more with such generous provision. The work at Berkeley will be up to date in methods and facilities so far as they go and will give opportunity to demonstrate what the local demand is for such instruction. The most promising thing about the present provision would be a demonstration that it is too small for the popular demand. It is expected that work can be begun at once and instruction offered during the fall of the year, but of this there will doubtless be authorized announcement later.

A good reminder of the superior advantages of California in the shape of a dry season for harvesting is found in some editorial remarks in the Orange Judd Farmer, where, speaking of traction engines, it says: "Traction engines are often used by threshermen to draw their outfits from one farm to another over the roads, which are usually dry and hard during the threshing season; but these engines have never been used in the field to any great extent. Besides the constant waste of power in climbing through soft ground, the soil under such conditions will give way or roll backward under the traction wheels, and there is an enormous additional waste of power on this account. While threshing machine engines are now built all the way from 15 H. P. to 30 H. P., and weigh no more than would be necessary to hold the wheels down in pulling with this amount of power, these engines have never been used successfully in the field except in a few instances for fall plowing when the ground is hard." The writer should have remembered California when making these remarks. Traction engines are freely used in our harvest fields, and operate our largest combined harvesters with the greatest facility. Our harvest fields are dry and firm and remain so long enough to draw out the sacked grain and go at dry plowing, if desired, while the land is in good shape for heavy machinery.

The vastness and variety of American agriculture is strikingly illustrated by our receipt in the same mail of two special publications by the Department of Agriculture, one, the fourth report by Prof. Georgeson on agricultural investigations in Alaska, and the other a report by Dr. Stubbs on the agricultural resources and capabilities of Hawaii. Here then, at a glance, we have extremes of conditions; on one side the arctics, on the other the tropics. Looking through these beautifully illustrated documents we have icebergs, snow fields and dog trains; on the other tropical vegetation of the greatest variety and beauty, coral keys and half-clad natives at work in cane and rice fields. These publications show how quickly the Department of Agriculture is rising to the new extension of its field and its responsibilities, and incidentally, how far beyond merely temperate zone conditions our national agriculture has extended. The fathers of the Republic could not in their wildest dreaming have formed any conception of the coming greatness of their offspring. In fact, even a decade ago we who now see these things would have scouted any prophecy which included what are to-day becoming the commonest facts of our national growth.

QUERIES AND REPLIES.

Red Spider on the Hop.

To THE EDITOR:—The quality of our hops has deteriorated lately, owing to two causes: lack of fertility in the soil and ravages of the red spider. I think we can fertilize to advantage; but the spider question is not so easily solved. These insects seem to work on the vines, and during August they so sap the vines that the life is taken out of the hop, rendering it of much less value, or even to wither and dry up on the vines, instead of hanging and maturing, thus giving us a much longer picking season. The insect does not trouble much in England. We think the insect is in the ground around the hop plant. What do you think of the matter and what remedies would promise success?—M. H. DURST, Wheatland.

With reference to the red spider on the hop plant, further observation is necessary to enable one to advise confidently as to its treatment. The red spider passes the winter in the egg form—a very small, round, ruby-colored egg—which is exceedingly hard to injure by the application of insecticides, and is probably equally resistant to our winter temperature and moisture conditions. It is altogether likely that it would survive the winter at or near the surface of the ground around the old stools. If, however, the old stubble of the vines, left after cutting, remains in place during the winter, upon this rubbish the eggs would be chiefly found. If so, probably the insects could be reduced by carefully collecting all this old stubble and burning it before the spring temperature becomes high enough to hatch the insects. If these eggs should be found in the ground, it would need careful experimenting to determine what insecticide could be applied without injury to the hop root and still be destructive to the eggs. Although the eggs, as already said, are very difficult to destroy, the insect itself is destroyed very easily. The reason why it is so destructive in California and why you do not hear of it in English fields is because of our dry summer atmosphere. In a district where moisture collects on the hop plant by summer fogs, or where there are frequent summer showers, no great injury by this insect need be anticipated. Water seems to be very destructive, and a frequent spraying of the vines just as soon in spring as the hatching begins would undoubtedly prevent the subsequent rapid multiplication of the insect, which is so injurious to the plant. Sulphuring is also very effective against the red spider, and is the chief means relied upon to reduce it on almond and prune trees, to which it seems to be very partial. While in an active state the red spider is also readily destroyed by the various insecticides which are effective against the hop louse. Whether any of these treatments would be warranted by the profit derived from the hop acreage is, of course, another question which needs looking into. So far as the insect itself is concerned, we do not apprehend that you would have any great difficulty in holding it in check by timely application of the proper remedies.

Rye Grasses.

To THE EDITOR:—I have read with much interest the comment on rye grass in your issue of April 27th. Will you kindly inform me where I can obtain seed, and any data concerning time of planting, preparation of ground, suitability of different soils, etc. Also which variety of rye grass has given best results.—G. K. SWINGLE, Davisville.

The rye grass which seems to be most satisfactory in California and which can be recommended on a basis of at least twenty years' trial for situations of moderate moisture is the English, or perennial rye grass. It was first known here as "Australian rye grass" and was at first supposed to be an Australian plant, but subsequently it was ascertained that it was merely English rye grass acclimated in Australia and the seed brought thence to this State. Whether its residence in Australia accomplished anything for the plant has never been demonstrated. It is a fact that the so-called Australian rye grass seed has been sold in large quantities in San Francisco with the sacks branded with the names of English and Irish seed houses, showing that the seed came here directly from Europe and not from Australia. Botanically, the Australian is identical with the English or perennial species. A certain amount of Italian rye grass has also been sown in this State. According to its European history this grass should not be perennial, but it seems to have developed perennial characteristics in California. At present the

presumption is in favor of the superiority of the English species. It is not a bad idea to sow some of each kind for comparison, or to sow them together, as some growers have done. Land for the sowing of these grasses should be prepared the same way as it would be for a wheat crop and the seed sown in the fall whenever the ground is sufficiently moist. It is a good winter growing plant and in order to maintain itself through the dry season should have the advantage of deep rooting during the previous winter. The grass is now growing successfully on a very great variety of soils—all the way from a light mixture of sediment and peat on the tule islands to the heavy adobes of the interior and of the coast valleys. With irrigation large crops can be grown the year round; without irrigation the plant will become bunchy and the top will dry up during the dry season and in our most arid soils and situations many of the plants will die. But on the low lands and places where there is some fog or moist air from the ocean, life will be maintained in the old roots and early growth made at the beginning of the rainy season. We have no doubt that thousands of acres of this grass could be profitably used in connection with our dairying and stock growing in places where the summer drouth is not too severe.

Pruning the Cherry.

To THE EDITOR:—I have quite a number of cherry trees that are excessively tall—some young, some quite old. If I cut them back considerably, so as to bring them within reach for picking and spraying, will it hurt them? What is the best time to prune them? I have noted Mr. Wickson's recommendations in his work on "California Fruits." We are in danger of frost, having suffered severely this spring. Therefore, to avoid having the trees bloom too soon, I must prune late; but to avoid gumming, I must prune in midsummer, and many of the trees are suffering from gummosis now. Which is the best horn of the dilemma to take?—R. S. HARDIE BAUGH, Petaluma.

According to our experience, trees in the upper part of the bay region do not start early enough in the spring to incur the danger from premature activity, which threatens in the interior valleys or in the southern sections of the bay region. In most cases the lower temperatures induced by ocean influences hold back the trees as late as can be reasonably expected; and when occasional late freezing occurs, its effects must be patiently borne or prevented perhaps by recourse to smudging or firing or other direct means of frost fighting. We doubt if any retardation by late pruning would be appreciable under the circumstances. As for cutting back cherry trees, we have done a great deal of it with some of the upright growers and have seen no ill effects. We have cut back long leading branches when the fruit was ripe and picked the fruit from the severed branches. Afterward only short growth was made at the top, which came quickly into fruit, and the soaring disposition of the tree was checked. We always cut back to a lateral branch, never leaving a stub for some length above such a branch. We have seen trees cut back that way, the result being a great break of water sprouts and a dense bush in the top of the tree. This is undesirable, and can be measurably avoided by cutting to a lateral branch and afterwards thinning out the shoots near the point of amputation if too many appear. We would prefer to cut back about the time the fruit ripens, or a little later. The rush of sap is then over and there is less danger of gumming.

Philopena Almond.

To THE EDITOR:—I send you a sample of seedling almonds and would like to have your idea of the value of such a variety.—GROWER, Yolo.

The variety submitted for comment upon its desirability has a double kernel, or philopena, a feature which is not commercially desirable. There might be a certain demand for such nuts for social purposes, but doubling the kernel gives each part an ugly shape that is not acceptable to the confectioners for the manufacture of sugared almonds, etc., nor would it be desirable for the salted almonds, which are very popular. The demand in the case of almonds is for a full-sized, single kernel, and any variety which doubles its kernels forfeits these essential features. There was some year ago a variety quite widely planted, Rontiers Twin almond, a good grower and bearer, and at one time supposed to be desirable because of the double kernel. The present standards of desirability are of a different character. If there is anything concerning the growth or hardiness of the tree which you have noticed, we would like to know it.

Vegetable Hair.

To THE EDITOR:—We have an inquiry from France asking us where "a kind of elastic and light grass, known as vegetable hair," can be secured. As this is something new to us, I would consider it a favor if you would help us to solve the mystery. The parties say that they use a great deal of this article and desire to secure large quantities of it here, and thinking perhaps you might know what they mean I take the liberty of addressing you.—G. A. DENNISON, Acting Secretary State Board of Trade.

We have exhausted our sources of information in an effort to find any "kind of elastic and light grass known as vegetable hair." We are quite in doubt as to whether any grass is a source of such material. The term "vegetable hair," as used in commerce, is applied to the fiber of a palm (Chamærops humilis) which grows wild in large quantities in Algeria. The fiber extracted from the leaves of this plant is curled and dyed so that it becomes quite a successful imitation of horse hair, and the export of this product from Algeria to Europe is exceedingly large. This industry has been long established and we hesitate to think that this is the matter to which your correspondent refers, because the source of an article so largely used in France would seem to be known to him. If he should be using the term "vegetable hair" to apply to some fiber which was not curled and not used for upholstery, but for some other purposes, we can only conjecture that this fiber may be ramie, and this surmise may have some support in the fact that one of the names of ramie is "China grass," although the plant itself is one of the nettle family and not at all like what we understand by the term "grass." It is possible, however, that this name has misled your correspondent as to the character of the plant which he desires to find. Ramie can be grown in any quantity in California, for the soil and climatic conditions are eminently satisfactory to the plant, but the preparation of the fiber is still an unsolved problem. There are many machines and processes which give a most beautiful fiber, but none up to this time have succeeded in producing it cheaply enough to compete with the cheap hand labor which is available in China and India. If any reader of the PACIFIC RURAL PRESS knows that the so-called "vegetable hair" is really derived from some other plant than the palm or the ramie above noted, we shall be glad to have the facts. At the same time, if the French correspondent could send a sample of the material which is satisfactory to him, or could by any means ascertain the botanical name of the plant from which it is derived, we should have no difficulty in reaching a definite conclusion.

No Disease Apparent.

To THE EDITOR:—Enclosed you will find some twigs of my peach trees. I would like to know what is the matter with them. Some of the leaves are falling off. What can I do for it?—P. MILLER, Del Rey.

There is no sign of disease on the leaves or twigs. The petering out of the foliage is due to general lack of thrift in the tree, resulting probably from injury to the root, either by defective moisture conditions or alkali. Either too much or too little moisture might have caused the trouble. It does not seem to be like the frost blight, of which there has been much complaint this year.

Apricots and Almonds in the Wrong Place.

To THE EDITOR:—A year ago a number of our apricot and almond trees on the top of our hill died—apparently drowned—and when we replaced them the ground was blasted, in order to break up the hardpan. Our man now writes us that the same thing is occurring this year in greater measure, and that he is afraid the trouble lies below the blasting—in the clay subsoil—and that we will not be able to raise 'cots on such a subsoil. Is this correct, or is there something further we can do?—READER, San Francisco.

The only suggestion we could make for the relief of apricot or almond trees planted in a heavy clay would be to cut down to a depth of about 3½ feet, put in tile and allow the surplus water an opportunity to escape. Unless this is done, there seems to be no hope for the trees in such a subsoil. Whether the trees remaining are worth that expenditure, you would have to judge. There would probably need to be one line of tile along each row of trees. Our judgment is that it would not be wise to plant more apricots in such soil; but if you have enough of the original planting to make it worth while, you could fill the gaps and thus secure a respectable orchard by having recourse to this underdrainage. Neither almonds nor apricots should be planted in such soil—in fact, if we could find better ground, we would not plant any fruit trees in such a place.

The Barry Pear.

To THE EDITOR:—What are the chief objections to the growing of the P. Barry pear?—FRED RAISCH, Palisade, Colorado.

We do not know objections to it. It is proving satisfactory in California in regions adapted to the growth of late pears and is being planted as superior to several of the old winter varieties as a better bearer and less subject to pear smut.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 13, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather has been generally clear and warm during the week, and crops have made rapid growth. Grain shows plainly the benefit derived from the recent heavy rains, and an abundant crop seems assured. Hay and pasturage were also greatly benefited. Haying is progressing, and the yield and quality are said to be excellent; the damage by the rain was very light. Hops, corn and alfalfa are in good condition. Prospects continue good for an abundant yield of deciduous fruits in most sections. The season has been unusually favorable for citrus fruits.

COAST AND BAY SECTIONS.

Heavy fogs along the coast and nearly normal temperature following the rain of last week have been very beneficial to all crops. Grain was greatly improved by the rain, and prospects are good for a heavy crop. A large crop of hay is now being cut; it is said to be of excellent quality. Beets and hops are looking well. Pasturage is abundant in most places. Vineyards and orchards are in good condition in most sections. In portions of the Santa Clara valley, however, deciduous fruits were so seriously injured by April frosts that a very light crop is probable. Cherries are ripening rapidly in Alameda county, but are said to be later than last season.

SAN JOAQUIN VALLEY.

The weather during the past week has been clear and warm, conditions which are most favorable for all growing crops. The rains of the preceding week have entirely changed the crop prospects, and indications now point to a good yield of wheat and barley and a fair crop of excellent quality. Some hay had been cut previous to the rains and it was damaged, but the bulk of the crop remained standing. Haying is in full progress, and a large crop of good quality will be harvested. Wheat and barley are filling nicely and beginning to turn in some localities. Fruit and grapes are making good progress. Cultivation of orchards and vineyards is well advanced. Soil is in good condition and water and green feed are plentiful. Stock are doing well. About 150 acres sown in flax near Elmdale, as an experiment, and is now in bloom and looking well.

SOUTHERN CALIFORNIA.

The weather has been generally cool, with considerable cloudiness and heavy fogs along the coast, and conditions have been favorable for all crops except hay and early fruit. Light showers have fallen in some places. Grain is looking remarkably well in some sections, and preparations are being made for an early harvest. Hay cutting continues. The rain last week damaged considerable of the cut hay, but the late hay was benefited. Deciduous fruits and grapes are in fair condition, but would be improved by dry, warm weather. Walnuts are looking well, and citrus fruits are in good condition.

EUREKA SUMMARY.—Favorable conditions continue. Growing crops are progressing satisfactorily. Some oats are heading, and strawberries are beginning to ripen. Prospects are good for full crops of hay and grain.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 15, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka	.00	45.93	48.55	42.05	60	44
Red Bluff	.00	24.21	22 94	25 48	92	58
Sa ramento	.00	19 52	20.24	19.67	86	50
San Francisco	T	20.51	18.42	21.98	68	48
Fresno	.00	11.06	10 27	8 55	92	48
Independence	.06	5.61	3.65	4 52	86	54
San Luis Obispo	T	30.85	17 20	16 58	70	46
Los Angeles	T	15 58	7.91	16 95	72	54
San Diego	T	11 25	5.80	9 31	66	58
Yuma	.00	3.60	1.29	2.87	96	56

FRUIT MARKETING.

California Surplus Fruit Products in 1900.

Gen. N. P. Chipman, president of the California State Board of Trade, has just favored us with a copy of the last of his admirable series of statistical reports concerning California fruit productions available for export in 1900 and now practically sold and paid for. As is our custom, we produce largely Gen. Chipman's tables and the comments which he makes to elucidate them:

GROWTH OF THE FRUIT INDUSTRY.—It was a genuine surprise to all those who had taken but a superficial view of the relative importance of our varied industries when I showed as early as in 1890 that the value of the exports of our orchards, vineyards and gardens exceeded in value the wheat at that time exported from the State. I began gathering the statistics as to shipments of these products out of the State for the year 1900. It was then shown that the fruits, wines, brandy and vegetables amounted to 16,195 carloads of ten tons each; the report which I now submit shows that these same products, sent out of the State for the year 1900, amounted to 66,797 carloads, an increase of 50,602 carloads in ten years. I remember to have predicted in one of my earliest reports to this Board, a forecast which was received with much incredulity by the public, that in the year 1900 we would export 50,000 carloads. When we commenced our shipments by rail to the Eastern States the transportation companies were sending empty cars eastward to bring back articles of consumption for this coast, for which at that time we had little to return in exchange. This condition was reversed some years ago through the growth of our fruit industry, the effect of which was important in many ways. It enabled us to supply the wants of our people by an exchange of commodities instead of making payment in cash, which is the most favorable condition in which any country can be placed. It will be seen that to move these products will require ten trains of eighteen cars each every day of the year, and that means that a car must be loaded and ready for shipment every eight minutes. It would be impossible for the railroad companies to do this if they had not greatly increased the minimum tonnage of the car.

When we entered upon the work of this Board it was with some distinct conceptions of the duty that lay before us. We believed, and we acted upon that belief, that large land holdings in single ownership were retarding the growth of the State; that what we most needed was re-enforcement of our population, and that it could come only by breaking up these holdings; that the natural conditions of soil and climate, rainfall and facilities for irrigation, where rainfall was deficient, combined to make California the future orchard of America; that products that would bear transportation by rail to Eastern markets—products which could not be there grown—were much more important than the cereals that went into competition with the labor of all parts of the world, and had to be carried half around the globe to market; that land so situated, climatic conditions considered, as to produce every fruit known to the globe, except in extreme tropics, should not be given over entirely to products that can be grown in every country on the globe, and in many countries more profitably than here; that it was a perversion of God's gifts to throw away the incalculable advantages of our matchless climate and go on forever growing wheat; that California is adapted by every favorable condition to intensive farming, where man, guided by intelligent industry, can entice from ten or twenty acres of good land a more comfortable living than can be wrested by the same man from the average hundred-acre farm elsewhere; that our immunity from the extremes of heat and especially of cold, the physical features of life we enjoy, with a climate Edenic in its mildness and charm, would attract home seekers in large numbers if the way were pointed out to them, and the land could be found for them to occupy. These were some of the beliefs entertained by us when we entered upon the work of this Board.

PROGRESS MADE.—Substantial progress has been made along the lines we adopted, and our hopes have been in large measure realized. It will be found by consulting the appended tables that the horticultural industries of the State, embracing the orchard, vineyard and garden, bring in three times as much money from without the State, as we receive from all our exports of cereals grown in the State; and it will also be seen that in developing these industries we have not reduced materially the output of the cereals nor the output of wool. The sugar-beet industry has also made its way in the State, with no diminution in our fruit growing area or our cereals. Of course, the orchards do not encroach upon the mines, and that industry has steadily advanced in development, and now reaches the annual output of over $30,000,000. The lumberman, too, has awakened to the increased value of his home market, which for packing boxes alone is worth vastly more to him than his entire export trade. In short, fruit growing has added a new source of wealth to the State without interfering with any other industry.

GENERAL SUMMARY AND COMPARATIVE TABLES OF SHIPMENTS OUT OF STATE, BY RAIL AND BY SEA, OF FRUITS WINE, BRANDY AND VEGETABLES FOR TEN CONSECUTIVE YEARS—TONS OF 2000 POUNDS.

KINDS.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.
Green deciduous fruits	50,548.9	59,374.5	80,112.3	90,692.2	66,254.8	57,638.3	72,350.2	69,732.2	96,943.6	91,176.5
Citrus fruits	46,921.4	34,857.5	80,757 0	58,964.0	115,825.5	99,156.0	98,547.0	180,658.9	131,916.8	226,546.6
Dried fruits	32,919.0	29,762.2	45,386.2	51,828.2	61,386.4	48,522.8	75,159.7	76,662.7	86,925 3	90,052.8
Raisins	22,779.1	26,673.4	37,409.9	46,954.4	46,390.1	34,434.6	39,065.8	47,796.3	36,008.7	36,047.0
Nuts	1,358.9	2,061.9	1,796.5	3,953.5	3,234.7	4,972.6	5,808.6	5,815.8	6,608.4	6,518.4
Canned fruits	32,395.0	55,273.7	31,626.3	60,352.6	41,395.5	45,546.9	73,464.7	52,219.7	75,240.0	75,556.9
Carloads fruit, by rail and by sea	18,692.2	20,800.3	27,708.8	31,274.4	33,547.2	29,026.7	36,439.6	43,288.6	43,364.3	52,901.5
Carloads vegetables, by rail	none rep'ted	none rep'ted	6,978.4	4,276.6	3,613.6	1,130.6	4,243.8	3,045 6	2,613.6	4,367.8
Carloads vegetables, by sea	none rep'ted	none rep'ted	none rep'ted	410.0	40.0	487.7	490.8	801.4	790 7	772.9
Carloads wine and brandy by rail and by sea	4,765 1	4,832.5	6,620 9	7,663.5	8,056.8	7,609.0	6,897.8	9,014.0	8,713.9	9,067.3
Carloads fruit, vegetab's, wine, brandy, by rail and sea.	23,347.3	25,632.8	40,928.5	43,624.7	45,257.4	38,254.0	48,072.0	56,149 6	55,482 5	66,797.8

SHIPMENTS OF FRUIT OUT OF STATE BY RAIL IN 1900, SHOWING TERMINAL POINTS OF SHIPMENT. TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green Deciduous.	Citrus.	Dried.	Raisins.	Nuts	Canned	All Kinds.
North. Cal.							
San Fran'co	51.9	76.9	5.458.0	74.8	669.0	16,183 1	22,603.7
Oakland	1,990.0	.....	530.0	.....	94.7	7,220.7	9,835 4
San Jose	17,978.6	.4	32,270.4	5.9	55 5	7,001.6	57,312.4
Stockton	10,864.1	5,089 9	23,599 4	29,888.7	302.5	4,608.8	74,353.4
Sacr'mento	52,794.3	439 5	13,157 8	878.9	700 9	6,077.8	74,049 2
Marysville	4,159.7	2,666.9	5,612.9	326.3	318.9	4,128.9	17,213.6
Not des'ted	151.9	.....	4.181.4	3,042.9	.....	459 0	7,835.2
Total tons	87,990.5	8,273.6	84,899.9	31,217.5	2,141.5	45,679.9	263,202 9
Total cars	8,799.1	827.3	8,490.0	3,421.7	214 2	*4,568.0	26,320.3
South. Cal.							
Los Ang'les	89.8	133 864 8	1,748.5	885 4	3,413.8	4,172 7	144,175.0
Orange Co.	.....	13,512.3	492.7	69.3	924.6	139.1	15,138 0
Riv'side Co	26 4	35 460.6	130.1	39.1	.....	.....	35,652 2
San Ber. Co	.....	29,036 0	1,265 5	273.8	10.8	616 8	31,202.9
S. Diego Co.	82.5	6,309 3	59.6	313 6	.....	.....	6,795.0
Total tons	198 7	218,183.0	3,696.4	1,611 2	4,349.2	4,928.6	232,967.1
Total cars	19.9	21,818.3	369.6	161.1	433.9	492.8	23,296 7
Cars rail	8,819.0	22,615.6	8,859 6	3,582.8	649 1	5,060.8	49,617.0
Cars sea	298.7	9.9	145.8	21.8	2.8	2,806.4	3,281.5
Sea and rail	9,117.7	22,654.6	9,005.4	3,604.5	651.9	7,867.2	52,901 5

*Contains 311.6 carloads of canned vegetables.

SHIPMENTS OF FRUIT OUT OF STATE BY SEA IN 1900. TONS OF 2000 POUNDS.

	From San Francisco.	Total Carloads.
Green deciduous	*2,987.5	298.7
Citrus	*90.0	9.0
Dried	*1,457.5	145.8
Raisins	*218.3	21 8
Nuts	*27.7	2.8
Canned	†28,064 0	2,806.4
All kinds	32,844.8	3,283.5

*Hawaii not included, figures not being obtainable † Hawaii included to June 14.

SHIPMEMTS OF VEGETABLES OUT OF STATE BY RAIL IN 1900—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green.	Canned.
Northern California.		
San Francisco	10,513.1	209.2
Oakland	267.4	1,956.4
San Jose	214 9	126.8
Stockton	3,204.5	30 0
Sacramento	4,355.3	752.2
Marysville	93.9	.....
Other points not designated	1,380.8	.....
Total tons	20,029.9	3,074.6
Total carloads, 10 tons each	2,003.0	307.5
Southern California.		
Los Angeles	19,925.1	41.3
Orange County	606.7	.....
Riverside County	.....	.....
San Bernardino County	.....	.....
San Diego County	.....	.....
Total tons	20,531.8	41.3
Total carloads, 10 tons each	2,053.2	4.1
Total carloads by rail	4,056 2	311.6
Total carloads by sea	754.2	18.7
Total carloads from State	4,810.4	330.3

SHIPMENTS OF VEGETABLES OUT OF STATE BY SEA IN 1900—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green.	Canned.
San Francisco	7,541 6	187.3
Total tons	7,541.6	187.3
Total carloads, 10 tons each	754.2	18.7

SHIPMENTS OF WINE AND BRANDY OUT OF STATE BY RAIL IN 1900.—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Wine.	Brandy.	Wine and Brandy not Seg'gated.
Northern California.			
San Francisco	27,043.7	1,616.1	3,617.3
Oakland	816.0	16.0	.....
San Jose	2,370.9	185.6	.....
Stockton	6,967.1	897.1	.....
Sacramento	12,308.4	318.3	.....
Marysville	2,199.0	222.5	.....
Other points not designated	.....	.....	690.8
Total tons	51,695 1	3,255.6	4,308.1
Total carloads, ten tons	5,169.5	325.5	430.8
Southern California.			
Los Angeles	838.0	24.1	1,769 0
Orange County	.....	.....	84 6
Riverside County	.....	.....	.....
San Bernardino County	.....	.....	120 6
San Diego County	.....	.....	1.4
Total tons	838.0	24.1	1,915.6
Total carloads, ten tons	83.8	2.4	191.6
Total carloads by rail	5,253 3	328 0	622.4
Total carloads by sea	2,831 1	32 5	.....
Total carloads from State	8,084.4	360.5	622.4

SHIPMENTS OF WINE AND BRANDY OUT OF STATE BY SEA.—TONS OF 2000 POUNDS.

Place of shipment.	Wine.	Brandy.
San Francisco	28,310 5	324.7
Total carloads, ten tons each	2,831 1	32.5

TABLE OF GAINS AND LOSSES, 1899 AND 1900 COMPARED—CARLOADS OF TEN TONS EACH.

KINDS.	1899.	1900.	Gain.	Loss.
Green deciduous	9,694.4	9,117.7	.....	576.7
Citrus fruits	13,191.7	22,654.6	9,462.9	.....
Dried fruits	8,692.5	9,005.4	312.9	.....
Raisins	3,600.9	3,604.6	3.7	.....
Nuts	660.8	651.9	.....	8.9
Canned fruits	7,524.0	7,555.6	31.6	.....
Vegetables	3,404.3	5,140.7	1,736.4	.....
Wines and brandy	8,713 9	9,067.3	353.4	.....
Totals	55,482.5	66,797.8	11,900 9	585.6
Net gain	.....	.....	11,315 3	.....

SOME DEDUCTIONS FROM STATISTICAL TABLES.—The tables herewith submitted invite certain comments as explanatory of their significance. The transportation companies report to me the shipments as from certain terminal points in northern California and in southern California. I am thus enabled to show the relative development of the fruit growing industry in these two separate divisions of the State—the Tehachapi mountains being the dividing line between the two. This has been done as the best and truest means of determining the relative importance of the two regions, as far as the fruit, wine and garden industries of the State are concerned.

SHIPMENTS OF FRUIT.—Of the green deciduous fruit shipped out of the State, 8799 carloads went from northern California and but nineteen carloads from southern California; on the other hand, the shipments of citrus fruits show that in 1900, the year to which I refer, 21,818 carloads went from southern California and 827 from northern California. A like disparity will be seen to exist in favor of northern California in the matter of dried fruit, raisins and canned goods, as appeared in the shipments of green deciduous fruits. This must necessarily be so because of the much larger development of this branch of the fruit industry in the north than in the south. There went from the north of dried fruit 8490 carloads, and from southern California 369; of raisins there went from the north 3621 carloads, and from the south 161; of canned goods from the north, 4568 carloads, 492 from the south. To the shipments from the north should be added those appearing in the tables by sea from San Francisco, amounting to 3284 carloads. The magnitude of the citrus industry in the south will be appreciated when it is observed that it amounts to nearly as many carloads as the north sends out of green deciduous fruits, dried fruits and raisins combined.

VEGETABLES.—In the matter of the shipments of green vegetables, the tables show that considerable more went from the north than from the south; that is, 2757 carloads from the north, by rail and by sea, and 2053 from the south. Of the canned vegetables reported, 307 carloads went from the north and four carloads from the south.

WINE AND BRANDY.—Coming to the wine and brandy industry, it will be observed that of the wine, 5169 carloads went from the north and eighty-three carloads from the south; and of the brandy, 325 carloads from the north and two carloads from the south. In addition to the foregoing should be added 2831 carloads by sea from San Francisco of wine, and thirty-two carloads of brandy. Wines and brandies not segregated, from the north 430 carloads, and from the south 191 carloads; total shipments of wine and brandy from the north, 8789.4 car-

loads; from the south, 277.8; in all, 9067.3 carloads. It will be seen that, except as to citrus fruits, the orchards and vineyards of California are in the north, and that nearly all the oranges and lemons are in the south.

GAINS AND LOSSES 1899–1900. — Turning to the table of gains and losses between 1899 and 1900, it will be observed that the shipments of green deciduous fruit fell off 576 carloads in 1900. Citrus fruits showed a gain of 9462 carloads; dried fruits showed a gain of 312 carloads; raisins, a slight gain of three carloads; nuts fell off eight carloads; canned fruits gained thirty-one carloads; vegetables gained 1736 carloads; wines and brandy, 353 carloads, showing a net gain for the year over 1899 of 11,315 carloads, of which nearly 9000 carloads were citrus.

Looking to the table of comparative shipments for a series of years since 1890, it will be noticed that there has been a steady and rapid growth of the citrus fruit industry. The shipments of green deciduous fruits have not increased as has been our hope they would, or as they ought to have increased.

The shipments of 1894 were nearly as great as in 1900. The result has been an increase in the dried fruit product, the tables showing a very steady growth, now amounting to over 9005 carloads, as against 3229 carloads in 1890. The lack of development in green deciduous fruit shipments is in part attributable to the unsatisfactory condition in which the transportation companies have heretofore been able to deliver the fruit at points of consumption, resulting from the slow time made. The matter has been recently very fully presented to these companies, and it is believed that a remedy will be found for the evils heretofore existing, and that the hopes of our fruit growers will be realized in the matter of disposing of their products in that form. It is of much importance both to the grower and the companies. To the grower the importance lies in the fact that he is relieved from the cost and added trouble of drying his fruit, and he gets his returns earlier, and to the transportation companies in the increased number of cars required and the consequent increased revenue, not to mention the encouragement it would give to still greater development of the industry. Then, again, if our fruits can be disposed of in large part, it will result in better prices for dried fruit, a result very much to be desired.

RAISIN INDUSTRY.—An examination of the table shows also that the raisin industry reached its maximum in 1894, yielding 4695 carloads; but one year since that time, 1898, has the output been so great, and the year 1900 was 3604 carloads, about the same as in 1899.

WINE AND BRANDY.—It will be observed that the shipments of wine and brandy since 1891 have increased from 4765 carloads to 9067 carloads, nearly 100%.

THE DAIRY.

The Great Creamery Movement.

Great creameries are being established and other greater ones are being projected at such a rate that central manufacture and long cream carriage bids fair to revolutionize the butter making business. In California this movement is making headway and it is rather a surprising fact that San Francisco has three creameries proposing to purchase cream from all attainable distances and there seems no established limit to distance where trains run and navigable water flows. The manifest purpose is to secure a large output of strictly uniform first-class butter and evidently scattered creameries in different localities are not reaching this product. It is difficult to say how far this movement may go. The greatest thing we have heard of is mentioned by the veteran dairy writer along Jersey lines, Mr. L. S. Hardin of Louisville, Ky., who has the following in the Jersey Bulletin of May 7:

There are rumors on the "street" that the Borden Condensed Milk Co. is about to go into the butter-making business. This may mean a great deal to the butter-making creameries throughout the country. These are the days of gigantic combinations in commercial affairs. It is only necessary for one of these monstrously rich men to find a field to exploit and the job is done.

Now it is a simple fact that only about 4% of the butter made in the 100,000 creameries of the country sells at top creamery prices, while first-class private dairy prints about doubles the price of creamery seconds. Here is a state of case very inviting to the unlimited rich.

There is no good reason why the creameries as a class, instead of an exception, should not make high-class goods. Any bright young fellow can in a month be taught to make high-class goods, provided he knows he must do it or get out. Why all these poor butter makers should be left in the creameries at low wages is past finding out. What has become of all the graduates of dairy schools, that they have not crowded out the poor butter makers?

If the Borden Company should buy up a few thousand creameries and put in well paid good butter makers, who would clean those creameries up and make the best class butter, it would revolutionize the butter business throughout the country. There would then be no need for coloring butter a deep pumpkin yellow to cover the sins of the maker; but with fairly decent feeding and some Jersey blood, the butter would carry its own color, for the best quality of butter now has the least artificial color in it.

Just why men find it so hard to make a first-class article of butter is a mystery to me, for I have told time and again of my having taught young negro men in a short time all that was necessary to make the best article; but in that instance they had to be watched and made to keep things clean. That was all there was to it. It therefore resolves itself into a question of cleanliness; which we all know is relative, with no two men agreeing as to what constitutes cleanliness.

It is only necessary for a man who has lived in a refined home to go into an average creamery and smell things, to determine at once what is the matter with the butter. Many of these creameries have their floors and the earth beneath them so soaked with droppings of the churn or the whey tank, that nothing but fire would purify them. If Borden or some one else would clean up these creameries and keep them clean there would be a phenomenal rise in the quality of butter all along the line.

COMMENTS.—This paragraph of Mr. Hardin's is very suggestive. We pass the color line, which as a Jerseyman Mr. Hardin could hardly fail to draw. His point that less color would be needed is of course true, but a careless reader might think he said that uniformity could be had without color. We doubt that. It seems to us that he makes it too easy to reach uniformity. What he says about cleanliness is true but it is not all there is in it, nor is it merely to attain absolute cleanliness that great creameries are being projected. There are other things than that in such butter making as is now demanded. Even if all the creameries and dairy houses that are soaked with filth should be burned up, as they ought to be, there would still be plenty of opportunity left for concentration and high-class work, such as manufacturing trusts insist upon. We are on the edge of a new regime in creamery operation, we firmly believe.

Free Educational Butter Scoring Contest.

TO THE EDITOR:—One of the purposes in organizing the California Creamery Operators' Association was to seek to improve the quality of our butter by means of competitive scoring exhibits, or contests. How to successfully conduct such contests under California conditions, where it has first to be worked into a system, has received a great deal of consideration from butter makers and others. The matter came up for discussion at the meeting when the association was organized on Jan. 2d, many favoring a series of scoring contests throughout the year and awarding prizes on the averages of the scores made. This system is being followed up earnestly in Eastern States and will be watched with interest by our association.

A meeting of the executive committee was recently held for the purpose of taking action in regard to exhibits. After carefully considering the matter, it was believed to be premature to undertake to hold the series of contests this year, as the season was too far advanced and it involved more work than the officers of the association could give to it, but it was considered advisable to hold an experimental or preliminary contest in San Francisco at a season most favorable to the largest number of butter makers on the coast, standing an equal chance of making a creditable showing. Not later than the middle of June was considered the most favorable season.

To make a success of such an undertaking, it was considered advisable to invite the co-operation of the butter dealers of San Francisco through the Dairy Exchange. The proposition was favorably received by the exchange and a committee, consisting of W. H. Roussell, F. W. Reed of O. B. Smith & Co., and Frank Harville of Russ, Early & Harville, was appointed to act with the executive committee of this association. The hall of the exchange will be used for holding this exhibit.

The joint committee are now working on the details of the contest to be held in June, the exact date and details soon to be announced. To lend enthusiasm to the contest, prizes will be awarded in the form of ornamental cups or medals, especially designed for the occasion, and on which the winner's name and score will be engraved.

In addition to giving a score on the entries, each one will be examined by experts, who will give details as to what is lacking in the entry and how it may be improved, as was done at the recent successful exhibit of the National Creamery Butter Makers' Convention, and every effort will be used to make this a strictly educational feature.

The contest will be free to all butter makers, in or out of California, who will enter not less than twenty-five pounds of butter. Entries may be sent direct to the secretary of the association, who will dispose of the butter after it has been scored, and remit the amount of its sale to the exhibitor after deducting freight or express charges, or the entry may be sent through the commission house in the city that regularly handles the product of the exhibitor, and after being scored in the contest, it will be returned to the house and sold in the regular way. In this way there can be no loss or expense to the exhibitor. The committee hopes that all who enter will become members of the California Creamery Operators' Association by paying the initiation fee of $3, which can be taken out of the sale of the butter entered in the contest, but not being a member will not bar any butter maker from entering the contest.

As soon as the committee is able to prepare them, a set of rules governing the contest, with entry blanks, instructions for shipping, etc., will be sent out. Further information regarding the exhibit may be had by writing the secretary. Creamery operators and butter makers are especially invited and urged to assist in making this contest a success.

WM. H. SAYLOR, Secretary.
HENRY F. LYON, President.

TRACK AND FARM.

The Market Classes of Horses.

NUMBER II.—CONCLUDED.

By E. DAVENPORT, Professor of Animal Husbandry, in Bulletin No. 62 of the University of Illinois.

CLASS 2.—CAB HORSES.

USES.—As the name indicates these horses are used on cabs and other light vehicles kept for public service. This class of horses is also used for light delivery, and those owned by the better mercantile houses are the pick of the class. These two uses fix the class and the price, though many will be found in other places where light, plain driving is needed.

DESCRIPTION.—The cab horse is a strong, blocky and useful little horse, 15 hands to 15-2 in height, and weighing 1050 to 1100 pounds. He must be a "rugged" horse, but he is plain, and is required to show but moderate action, though he must be able to go long at a trot, and handle some load.

VALUE.—While an exceedingly useful horse and one "consumed" in large numbers the supply is very large and values are always moderate, rarely exceeding $75 to $100. He is a good but plain and cheap horse. This is the smallest horse and the plainest one that the market demands or that can be sold at anything but ruinous prices.

PRODUCTION.—The prices realized warrant nobody in undertaking the production of these horses. The large supply is due to the fact that there are culls from Class 1, just described and from Class 3, next to follow, and that a sufficient supply will doubtless always appear naturally in the attempt to produce these two more valuable classes.

CLASS 3.—BUS HORSES.

USES.—These horses take their name from the foreign demand for use on omnibuses. They are used for the same purpose in this country, though the omnibus is less a feature of American than of foreign cities. For this purpose they are generally driven in pairs. The same horse is used here as an "express" horse or for heavy delivery. Whatever the use to which he is to be put, two requirements are imperative: First, he must be able to handle a considerable load, and second, he must do it at a slow trot and sustain the gait.

DESCRIPTION.—If there is any "general purpose" horse it is the bus horse. He must be fitted to handle a load at a slow trot, but is not required to show style. His action, however, should not be bad, and it must be easy. He must be a smooth-made horse, shape himself well in harness, give evidence of plenty of stamina and should stand from 15-1 to 16 hands, and weigh from 1250 to 1400 pounds. This is not a small draft horse, for his gait is to be the trot and not the walk. He must, therefore, show a more sloping shoulder and a longer and more sloping pastern than in the draft type, and go at the slow trot with perfect ease. The supposition that small draft horses will fill this class is a common mistake, that has cost American horse breeders much time and money.

VALUES.—These horses sell readily for export or home consumption at from $100 to $150. Classes 2 and 3, unlike Class 1, have no fancy prices, because there is no fancy service. Their work is purely commercial and their values are as standard as that of wheat, and fluctuate only within narrow limits according to individual quality like any other purely commercial article.

PRODUCTION.—This is the cheapest horse that it will ever pay to produce by direct effort. The best blood to use is probably a medium Percheron stallion and a small mare with fairly good action and plenty of bone and stamina. These horses can be sold without training, except that they should be broken to harness and accustomed to light work. These are

not driving horses, and no attempt should be made to develop speed.

CLASS 4.—DRAFT HORSES.

USES.—There is one standard use for the draft horse, and that is to haul enormous loads at the walk only, generally in the cities and on pavements or hard roads. They may be used single, in pairs, three or four abreast, unicorn fashion, or in fours, or even six, eight or ten-horse teams, two abreast.

DESCRIPTION.—Strength is the one consideration in the draft horse, and, broadly speaking, weight is the principal element. If, however, the mechanism of the horse is to endure the strain he must have a strong hind leg, especially at the hock, a heavy loin with short coupling and a strong front leg and dense hoof, because so large a proportion of his weight is, or should be, in front.

With the draft horse it is not a question of height, but of weight; indeed, the nearer the ground he is the better both for service and endurance. To class with draft horses an animal must weigh not less than 1500 pounds in good flesh, and he is all the more valuable if he weighs 1800, 2000, or even more. He cannot be too heavy if his "bone" corresponds to his weight.

Such a horse should be blocky-made with heavy bone, though smooth; short in the back, close coupled with heavy loin, rounded hips, wide strong hock, flat bone, moderately short pasterns, medium straight shoulder, heavy in the front, with full breast and legs placed well apart, though not extremely wide. The animal should carry a good covering of flesh, be smooth-finished all over, and manifest docility and a disposition to do heavy work with patience but with spirit. Accordingly he should show a bright, mild eye, an erect ear and a smooth, easy action at the trot. It should be as straight and true as described under Class 1, though this is not so important, and action is taken at the trot, not because he is expected to use the gait, but because it is the best indication of the ease with which he can handle his legs. The good draft horse is not expected to make speed, yet he must not be in constant "quarrel with his legs." Because it is easier to secure weight in fat than in bone, care should be taken to insure heavy bone in extreme weights, but this should not be done at the expense of fair finish.

VALUES.—Draft horses of good form sell almost according to weight, except that as weights increase prices rise at a much greater ratio, so that extreme weights bring enormous prices if only the bone is satisfactory. Prices range from $125 to $300, with an occasional one higher, and with an increase of about ten per cent when matched in teams. These prices are sometimes exceeded, and dealers insist that prices were never so low that a span of draft horses would not bring $600 if only they were good enough.

PRODUCTION.—This is par excellence the horse for the farmer to raise. Only the blood of the best draft breeds and the heaviest and best boned stallions are suitable. Even then the demand for extreme weights necessitates the use of large mares that are good milkers. In no other way can colts be produced with sufficient bone and feeding quality to attain the size and finish demanded by the markets. Even then the youngster must be supplied with the best of feed in large amounts from the very first. Plenty of good pasture, clover hay, oats and corn are imperative, and there is no better feed for young horses than green corn cut from the field and fed whole. Only the best blood should be used, and then every effort must be made to keep the horse gaining from the first if he is to top the market.

All this is much like growing beef, and these are the horses to produce on the farms. They can be produced nowhere else to advantage, and, when it is remembered that the draft horse is really the highest-priced standard horse in the market, it is easy enough to see what horse the farmer should raise. He not only sells for more average money, but if bred with the same care there are fewer culls, and no training is required beyond light, common work to familiarize him with the harness and with drawing. The disposition of the draft horse is so docile, and his ancestors have labored so long, that he works almost by instinct, and he requires no special training to go upon the markets.

CLASS 5.—THE AMERICAN TROTTER.

This must be a Standard Bred registered horse with a record not less than 2:18. His training must be gilt-edged from the racing standpoint, and the price is from $200 up.

No other class of horses has so many culls, nor such worthless ones as this, and it is a class to be bred and handled by the professional horseman and not the farmer.

MISCELLANEOUS HORSES.—Aside from these standard classes there are fire horses, police horses, etc., etc., each with somewhat distinct requirements. The demand being limited, it is always easily satisfied from the general supply, and, because limited, offers no inducement to the horse producer who cannot afford to breed for a class so limited in numbers. The saddler is an exception to the above, but the production of saddle horses is a special line of horse production and not of interest to the general farmer. The cavalry and the artillery horses are often called for in large numbers, but the demand is irregular, and, except in rare cases, is fully satisfied from the general stock on hand.

SUMMARY.—Market classes and types are fixed, not by the breeds, but by the uses to which horses are put.

As these uses are definite, the type and the class are fixed.

As these uses are exceedingly varied, there are often wide gaps between the market classes.

A horse that drops between the classes is a cheap horse, no matter how good an animal, either because there is little use for him or because the supply is unlimited.

The best horse to breed is one that most fully meets a definite, constant and strong demand, and has, therefore, a high average selling price.

Phenomenally high prices are as much due to the fancy of the individual purchaser as to the character of the animal. In any event they are seldom realized and are to be sought by the dealer and not by the breeder, as they represent but one out of hundreds or even thousands—too few to breed for.

The farmer should keep himself acquainted with standard classes in steady demand at uniformly good prices, breed these, and pay no regard to high speed, phenomenal sales or fancy values.

HORTICULTURE.

A Plea for Status Quo for the Prune Association.

We know no man in whose integrity and devotion to what he conceives to be best for prune growers we have greater respect than Mr. S. P. Sanders of San Jose. We are, therefore, glad to have him present in our columns the side of the present management of the California Cured Fruit Association, as we find him presenting it in the San Jose Mercury in these words:

I have been a grower of prunes in Santa Clara county for several years past and have always felt greatly interested in the promotion of all practicable plans for the disposition of our crops. The experience of the past few years has, in my judgment, demonstrated the need of combining the fruit interests, and, to that end, of organizing and maintaining our association. This need is, I believe, almost universally recognized among the fruit growers. Still, there are men of intelligence and excellent judgment who do not agree that this association is just what the situation demands. The very large number of its members, each of whom justly entertains his own views upon the subject, necessarily contributes a degree of weakness to almost any attempt at complete, practical organization. Yet the association was the outcome of very careful consideration, and, while it is not all we hoped it would be, it is assuredly a great improvement upon the conditions which existed before its formation. It is here to stay, either in its present form or in some generally similar form which experience may work out. I, for one, hope for its continuance, and feel free to urge upon its members the pressing necessity of giving to it their sympathy and support, as no co-operative plan of organization can be maintained without such support.

FAVORS PRESENT BOARD.—The time is rapidly approaching when each one of us must express his preference for the officers who are to have charge of the association and its affairs after June 5th. I am decidedly in favor of the re-election of all of the present officers. I have reached this conclusion only after anxious consideration. The situation of the association is, in my opinion, a critical one, and one, too, that is the logical outcome of conditions for which the officers of the association are not responsible. I do not believe that our interests would be best served by turning over the vast and complicated business of the association to new men, no matter how competent they have been in their own private business enterprises.

There are now on hand for disposition about 45,000,000 pounds of prunes, valued conservatively at $1,500,000, representing about 30% of the total output for 1900.

In the early part of that year no one would have looked for so tremendous a crop, and certainly no one could have foreseen the extraordinary crops of Europe, nor the large crops of competing fruits in this country and Europe. This situation is not confined at all to fruits, but extends to practically all classes of California produce.

The present officers of the association were face to face with unprecedented and unexpected conditions, and the formative period of the association's business was attended with most painful difficulties. A vast and complicated system of business, involving interests valued at practically millions of dollars, had to be devised, a business requiring the ability and keenness to perceive the interests of the fruit growers, and firmness and stability to take immediate and active measures to protect them.

ENEMIES OF THE ASSOCIATION.—Enemies of the association at once sprung up. Large interests which had been carefully fostered at the expense of the fruit growers of California became bitterly antagonistic to the very purposes we had in instituting the association and inaugurated the employment of all possible means of destroying the credit and influence of the association to the end that they might be able again to control the entire prune crop of California upon their own terms as they had been doing for so many years. In addition to these practical attacks other vital questions had to be considered.

Railroad freights and discriminations, a practical knowledge of the world's markets, of the world's supply and demand, of all the ramifications of a colossal, and at the same time experimental venture, had to be carefully and systematically studied, and the very personality of the officers impressed upon existing conditions. Grave questions of law and policy had to be considered, and actions freighted with live responsibilities had to be determined, all of which invited to a greater or less extent a world of criticism.

All these great problems have been considered anxiously and carefully by the present officers, and many of them have been happily adjusted by them. They have made mistakes, of course. Had the future been an open book to them all mistakes could have been easily avoided.

But through it all no one has ever questioned the honesty, or the good intentions, or the integrity, or the tireless industry, or the personal business capacity of Judge Bond, or of any one of the present officers of the association. Criticisms of their policy have been made. It is, however, easy to criticise, but in the conduct of business enterprises it is quite impossible to avoid criticism. In all human probability no set of officers of the association could have gone through the anxious and difficult months since it was formed without meeting antagonisms and provoking criticisms.

RE-ELECT JUDGE BOND.—We are now in the middle of the stream, with 45,000,000 pounds of prunes to land on the other side. We cannot turn back, nor can we stand still. Can we afford to swap horses? I say unhesitatingly no.

In the unmerited criticisms of some of the failures of the association thus far made all are practically ascribed to Judge Bond and its successes to chance. Even the contract with the Packers' Company is attributed to him, with all its imperfections, unwittingly, of course, as it was not even executed by him for the association, it having been negotiated and executed for the association by J. H. Henry, who desires to be its president. So, upon examination, many other things that are loosely said about the present administration will be found to be without foundation.

I believe that Judge Bond's vigorous and well-timed speech at the nominating convention May 2d showed the fallacy of many of the unjust and unwarranted reflections upon him and the present directors. In it he showed a thorough and detailed knowledge of the unfortunate conditions surrounding the association, an attitude of sympathy and solicitude for the interests of the 4000 members of the association, and a grasp of detail, and a moral courage necessary to deal with the large and momentous questions arising from the unjust demands upon the association made by the Packers' Company.

WILL PROTECT THE GROWERS.—It is safe to say that very few members of the association had any conception of the magnitude and injustice of the demands of the Packers' Company until they were plainly and boldly set forth by Judge Bond. These demands are simply enormous, and, unless met with ability and firmness, will rob the growers of this State of a large percentage of what they otherwise will receive.

With such vast interests in the balance, with the usefulness of the association at stake, are you prepared to turn down these men who have grown up with the association from the beginning, and who have familiarized themselves with the vast and complicated transactions to which I have referred, and the details of this great business, and put in their places men without experience in these directions and who will have the whole situation to learn, possibly at the expense of the growers of California? I do not believe that the sober judgment of the fruit growers of this State will suggest to them the propriety of making so radical a change, and of relegating the association to a stage of practical experiment.

Black Ben Davis and Gano.

TO THE EDITOR:—Are Black Ben Davis and Gano two distinct varieties of apples or not? H. E. Van Deman says in Rural New Yorker of March 30th, page 227: "Black Ben Davis may be distinct from Gano, but it surely resembles it so closely that there is no observable difference." E. A. Riehl of the Illinois Experiment Station says: "I cannot see how anyone can make the mistake of considering Black Ben Davis and Gano alike. The flesh of Black Ben Davis is yellowish, and has a sweetish taste, reminding one of Gilpin, while Gano has white flesh, and flavor like Ben Davis.—W. C. GRANT.

Victoria, B. C.

We do no know enough about these varieties to give an opinion. Perhaps some reader will give his judgment.

Agricultural Review.

ALAMEDA.

HOP FIELDS IN FINE CONDITION.—Oakland Tribune: The hop fields around Pleasanton look very pretty. The grounds are in good condition and the new cords have all been placed on the posts ready for the vines. The recent rains have been a great benefit to the hop fields and will assure a good crop this year.

BUTTE.

SAD EXPERIENCE WITH A STRANGE HORSE.—Chico Enterprise: Henry, the son of Mr. and Mrs. Sim Monk of Chapmantown, attempted to ride a strange horse, and as a result he is laid up with a badly shattered right leg. The boy went out in the pasture, and after catching the horse attempted to ride him home. The animal protested vigorously, and after throwing the boy, delivered a vicious kick, which struck the boy on the right leg about five inches above the ankle. The blow shattered both bones in a manner which will cause healing to be very slow.

CHERRY PICKERS SCARCE. — Chico Record: The picking of cherries for the Eastern market was begun on the Bidwell rancho Saturday, the picking being mainly of Black Tartarians. The output for the day was considerably less than was anticipated, owing to the scarcity of pickers. The prices paid for picking are about two cents per box higher than in recent years, yet the supply of pickers was considerably less than was needed.

BIDWELL CHERRIES.—Chico Record: Anthony Lowe and W. J. O'Connor have purchased the entire cherry crop of the Bidwell orchard, and a number of outside lots. The picking will be done with as large a force of men as can be secured. It is proposed to ship all of the cherries green, consequently the cannery will not make a cherry run this season.

KERN.

BEST CROP FOR MANY YEARS.—Visalia Delta: Harry Quinn, the big wool grower of Delano, says that the recent heavy rain was what saved the wheat crop of his section. On account of that rain the wheat crop in that section will be heavier than has been known for over ten years, and the railroads will be taxed to their utmost to handle the crop. Mr. Quinn has lived in this part of the valley a long time, and what he says concerning the grain crop can be depended upon as being correct.

KINGS.

BEE THIEF SENTENCED. — Visalia Delta: F. M. Chrisman of Hanford, who committed the theft of twenty-eight hives of bees near the Kings county capital several weeks ago, has been sentenced to serve three years in the State penitentiary. Breaking into the State's prison via the honey route does not appear to be a very sweet proposition.

LOS ANGELES.

DECIDUONS FRUIT CROP PROSPECTS.—Pomona Times, May 8: Close observers say there will be only from 100 to 200 tons of apricots in the area known as "this valley;" that there will be something near a full crop of prunes; that peaches will be abundant—many trees being too full and need thinning. Each year the pear crop is decreasing. Grapes will make a good showing at harvest time. Olives are a rapidly diminishing crop. There will be many plums of the several varieties. Walnut trees appear to be pretty full of young nuts.

MONTEREY.

FINE LOOKING GRAIN FIELDS.—Monterey County Democrat: T. J. Shearer, who is farming 5 miles east of King City, reports that the grain on his farm of 300 acres is so tall that stalks of it can be tied over the back of his saddle pony while the roots remain in the ground. Throughout all that section of the country there was never better promise of large crops.

NOT IN THE DRY BELT.—Salinas Index, May 9: Capt. T. T. Tidball reports 2.57 inches as the rainfall for the storm at Jolon, making 24.26 inches for the season. Feed and grain have been greatly benefited. There is every prospect for a fine crop of wheat. Jolon valley is not in the "dry belt" this year. In fact, it is one of the most favored localities in the county, so far as rain is concerned.

NEVADA.

SERIOUSLY INJURED WHILE BRANDING CALVES.—Grass Valley Union and Herald: E. Williams of Pleasant Valley, while branding calves, got tangled in the rope and was thrown into a rock pile, breaking his collar bone.

ORANGE.

A PESSIMISTIC VIEW OF THE CROP OUTLOOK.—Santa Ana Blade: Thousands of acres of early grain in this county are flattened to the ground, and that portion of it that can be cut and saved at all will be partially filled, "shoepeggy," and of inferior quality. The bee men and beet growers, however, will be materially benefited.

SPUDS SCARCE AND HIGH. — Santa Ana Blade: The potato crop is falling short and the man who possesses a patch of spuds is likely to realize a big profit. The market quotations on potatoes are now pretty steep, but there is every prospect that they will be doubled before many moons, and a famine in potatoes seems imminent in this vicinity.

SAN BENITO.

PULLING UP APRICOT TREES.—Hollister Free Lance: We learn of a number of orchards who intend to pull out their apricot trees. Mr. Nesbit of the San Juan valley is said to contemplate such a step and Assessor McConnell announces that he will pull out 600 apricot trees and turn his attention to some other industry, probably poultry raising. We are of the opinion that many of our orchardists would be now away ahead had they devoted the same amount of time and money to poultry raising that the put on unremunerative orchards.

SAN BERNARDINO.

A GOOD YEAR FOR HONEY.—San Bernardino Times-Index, May 10: This year will be a great one among the bee men, for the indications are that a record-breaking output of honey will result. For several years past the dry seasons have resulted in little or no honey, save in a few favored localities in southern California, but this year the drouth being broken, the conditions are changed and the busy little bee "certainly improves each shining hour." Flowers of all kinds have been unusually abundant this spring, and now the wild sage and "chamise" bush are coming into bloom in excellent shape. Places where sage has not bloomed before in years is now white with the snowy blossoms while the "chamise" brush is heavy with flowers. The bee men say the flowers have plenty of honey in them, which is not always the case, for on dry years while there may be a plenty of flowers it does not always follow that there will be honey, for during such periods the honey may be lacking from the blossom. It was the last rain that caused a good honey crop, for the moisture will keep the flowers and shrubs blooming, giving the bees a longer season to work, and, consequently, more honey. Already the work of extracting and dividing is going on.

MOUNTAIN LION KILLED BY A COLT.—San Bernardino Sun: Last Friday night Mr. Heap's corral was visited by a mountain lion, and a colt about a week old was slain by the animal. When Mr. Heap found his colt dead, he at once proceeded to the Highland mill and secured a quantity of alum, saying that he wanted it to tan the hide of a mountain lion. He knew that the lion would return a second time to the carcass of the colt, and he accordingly prepared to kill his lionship. After securing the alum Mr. Heap proceeded toward his home, and as he went by where the dead colt lay, he discovered the lion, who had returnod sooner than expected, and was again feasting on the colt, in broad daylight. Mr. Heap had his rifle with him, and it was but the work of a moment to place a bullet where it would do the most damage. The animal measured 9 feet from tip to tip.

SAN JOAQUIN.

A POTATO PATCH OF 7000 ACRES.—Lodi Sentinel, May 7: Ex-Deputy Sheriff A. McCulloch, manager of Victoria island, states that the farmers on the islands are putting in potatoes. He has about 100 head of horses plowing to plant potatoes and already quite a large acreage has been put in. Mr. McCulloch says that about 7000 acres will be seeded to potatoes on Victoria island this season, and the conditions are most favorable for a big crop. Last year over 700,000 sacks were grown on the island and very fair prices were secured.

HAY IN DEMAND AT GOOD PRICES.—Lodi Sentinel, May 7: Contrary to general expectations, the rain did weaken the hay market. Many people held the opinion that the downpour would cause a drop considerably per ton, put there are several conditions bearing on the market which will make it next to impossible for prices to go much lower. The stocks are small for this season of the year and are rapidly being cleared up. There will be less hay on hand when the new crop is ready for market than there has been for years. The water damaged some of the cut hay, but the weather was so favorable for two or three days after the rain that it dried out nicely and the actual loss will not amount to much in the San Joaquin, with the possible exception of the West Side, where the largest part of the hay was cut down. The crop this year will be considerably reduced by the rain causing a lot of grain that would have been cut for hay to mature and make sufficient barley and wheat to pay a profit over harvesting.

BIG ONION CROP.—Stockton Dispatch: The crop of red onions produced in San Joaquin county this season will be the largest ever grown. The first of the crop is just coming into the market, and they are commanding fancy prices, as they are very fine. A conservative estimate places the yield this season at from 80,000 to 100,000 sacks, or about 20% more than ever before. Most of the onions are grown by Italians, who have small holdings of land. They produce from 250 to 300 sacks on an acre and secure from 60 to 80 cents per sack as an average price. As high as 412 sacks have been obtained from an acre, but this was an exception.

SAN LUIS OBISPO.

ARIZONA CATTLE. — Arroyo Grande Herald: A. W. Dixson and J. S. Kinney have brought from Arizona fourteen carloads of cattle, which Mr. Dixson had been gathering up for several weeks. The cattle were driven to the Harloe ranch on the Huasna, where they will be pastured till ready for market. There were about five hundred head, and they were a poor, half-starved looking lot, showing plainly that feed was mighty scarce where they came from.

BOUNTIES ON SQUIRRRLS.—San Luis Obispo Tribune: Supervisor Pfister of Paso Robles says he will always oppose any effort to offer a bounty on squirrels. He cited the instance of a man who killed the squirrels for years, and always kept the tails, anticipating that at some time the county would offer a bounty and he could turn them in. Mr. McEvoy of San Mateo stated that in his county no one ever expects tho offering of a bounty on ground squirrels. People kill their own squirrels. It costs Mr. McEvoy from $150 to $200 a year to exterminate the squirrels on his place, but he does it successfully by using bisulphide of carbon, which costs $4 for a five gallon can. In applying the carbon all the holes in the ground must be stopped up. If this is done all the squirrels will be killed. Supervisor Freeman told of the successful application of bisulphide of carbon by James Cass of Cayucos.

SANTA BARBARA.

MUSTARD SEED GROWERS' COMBINE.—Lompoc Record, May 11: The mustard producers of this vicinity will organize today for the purpose of arranging to handle the coming crop on a fair basis of profit, or rather at a fair price. The price already settled upon by many of the largest producers is 3½ cents per pound for both varieties—the English and Trieste—which is fairer to the manufacturer than the producer, when the damaging effect of the product on the land is considered. The crop will fall far short of any estimates we have seen given to date, but will be of most superior quality, owing to the late rains, which will tend to mature the seed most perfectly. The limited quantity grown in the country will allow the producers to organize if they will and fix a fair price, and that suggested is fair to the average producer in ordinarily good seasons, such as the present promises to be.

SANTA CLARA.

APRICOTS AND PEACHES TOO THICK.—Mountain View Register, May 10: Considerable complaint is made by some of our orchardists of a lack of help to thin apricots. Dr. W. A. Gordon has a number of men at work thinning twenty acres of peaches. Mountain View, at least, does not seem to have been so badly hurt by the frosts as was imagined.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian, May 9: Small green worms are said to be doing some damage to the Loganberry crop in the eastern part of the valley.——Now is the time to fight codlin moth. The apple which has harbored a codlin moth is not wanted in any market.——The apple orchards which have been sold for this season up-to-date contain not to exceed 10% of the bearing apple trees of Pajaro valley and its tributary districts.——Numerous orchard sales have been reported; but there is not the old-time rush and excitement about the business, and the competitive bidding is not shown. Buyers are acting conservativoly, and, while they are paying on the average a shade better figure than those of last year, they are going in this time for apples and havo dropped tho old practice of buying blossoms and all the chances on the season.

GOOD PROSPECTS FOR HAY CROP.—Watsonville Pajaronian, May 9: Hop vines are late in showing above the ground in Pajaro valley this year, and for a time growers were of the opinion that the crop prospects were not better than they were last year—and the hop crop of 1900 was the poorest in weight yield per acre which has been gathered in Pajaro valley. The hop crop prospects have improved since the rain, and growers now report that, while the growth is late in showing, the vines are coming along evenly, and the promise is for a better showing than in 1900. Contracts have been made for this year's hops at northern points at prices equal to and above the contract prices of a year ago.

SOLANO.

BIG CHERRY CROP. — Vacaville Reporter, May 10: The cherry crop is the biggest we have had for years. Some trees really have too many cherries on them. The influence of the rain is entirely beneficial to the cherry crop, since it will increase the size very materially. The cherries, which a week ago were extremely small, seem to have doubled in size. Of course, the rain caused some ripe cherries to split; but the loss through that cause is quite immaterial in comparison with the benefits resultant from the increased size of the fruit and the benefits to the trees, which will be evident through the season of 1902.

EARLIEST SUMMER SQUASH ON RECORD.—Vacaville Reporter, May 10: Summer squashes were shipped from the ranch of Morgenstern & Milzner on Tuesday, April 30th. This is the earliest shipment of this vegetable ever made from Vacaville. All other early shipments heretofore have been made in the early days of May. The squashes brought a good price, selling for $2 for a 10-pound box. In the midst of the season 50-pound boxes are sold in the city for as low as 50 cents. There is money in it at that, too, for shipments are continued until the price goes still lower.

SONOMA.

INJURED BY PECK OF A FOWL.—Petaluma Courier: Mrs. James Robinson of Blucher valley is suffering from the results of a peculiar accident. A vicious fowl pecked the back of her hand, and symptoms of blood poisoning became manifest. Medical aid was summoned and there was difficulty in obtaining relief.

SIX HUNDRED CHICKS BURNED. — Petaluma Argus, May 9: Tuesday morning fire destroyed a brooder on the A. R. Hyatt place on the Santa Rosa road. The fire caught from the brooder lamp and burned brooder and 600 chicks.

SHORT PEAR CROP. — Cloverdale Reveille, May 11: A Santa Rosa fruit grower is authority for the statement that the pear crop of Sonoma county will be uncommonly short this year. He estimates that there will be only about 20% of a full crop in this and neighboring counties.

TEHAMA.

A BIG CARLOAD OF FRUIT.—Red Bluff News, May 9: The Cone & Kimball Co. on Tuesday shipped a carload of dried peaches to Chicago. The car used was one of the large furniture cars and contained 850 sacks of the fruit, amounting to 65,000 pounds.

COLONY OF BUGS LIBERATED.—Red Bluff Cause, May 11: R. W. Coates, the horticultural inspector, recently discovered a place below Tehama where the fruit trees were infested with the cottony cushion scale. He obtained from the State Board of Horticulture a colony of Vedalia cardinalis, better known as the Australian ladybug, and to-day went down to liberate them, that they may ravage upon and destroy the scale. He is directed to liberate them at sundown upon a tree infested with the cottony cushion scale.

TULARE.

THE PEACH CROP. — Tulare County Times, May 9: J. W. Rath, superintendent of the Visalia cannery, says he has been through the orchards pretty thoroughly, and says we are going to have a good crop of peaches. In the vicinity of Visalia and around Orosi and Traver the crop will not be so large as it was three years ago.

YOLO.

FRUIT TREES TOO HEAVILY LADEN.—Winters Express: While the people of the other sections of the State are deploring the destruction of their fruit crops by the frost, G. W. Scott of Madison has had a force of men employed in thinning the apricots and peaches in his orchard. The trees are so overloaded that it is necessary to pluck some of the fruit in order that the balance may attain a marketable size. Mr. Scott's vines were not injured by the frost and will yield a full crop.

ARIZONA.

AGAIN GRAIN DRIES UP.—Florence, A. T., May 10: The Gila river on the Sacaton reservation has gone dry and no grain will be harvested by the Indians owing to lack of water. There will be greater destitution than ever unless the Government comes to their relief. One more irrigation would have secured a good crop.

THE HOME CIRCLE.

The Old Rail Fence.

In the merry days of boyhood when we never knew a care
Greater than the mumps or measles or a mother's cut of hair,
When a sore toe was a treasure and a stonebruise on the heel
Filled the other boys with envy which they tried not to conceal.
There were many treasured objects on the farm we held most dear—
Orchard, fields, the creek we swam in, and the old spring, cold and clear,
Over there the woods of hickory and of oak so deep and dense,
Looming up behind the outlines of the old rail fence.

On its rails the quail would whistle in the early summer morn,
Calling to their hiding fellows in the field of waving corn,
And the meadow larks and robins on the stakes would sit and sing
Till the forest shades behind them with their melody would ring.
There the catbird and the jaybird sat and called each other names,
And the squirrels and the chipmunks played the chase-and-catch-me games,
And the garter snake was often in unpleasant evidence
In the grasses in the corners of the old rail fence.

As we grew to early manhood, when we thought the country girls
In the diadem of beauty were the very fairest pearls,
Oft from the spellin' school or meetin' or the jolly shuckin' bee
Down the old lane we would wander with a merry little "she."
On the plea of being tired (just the country lover lie),
On a grassy seat we'd linger in the moonlight, she and I,
And we'd paint a future picture touched with colors most intense
As we sat there in the corner of the old rail fence.

There one night, in happy dreaming, we were sitting, hand in hand,
Up so near the gates of heaven we could almost hear the band,
When she heard a declaration whispered in her lis'ning ear—
One she often since has told me she was mighty glad to hear.
On my head there's now a desert, fringed with foliage of gray,
And there's many a thread of silver in her dear old head to-day;
Yet the flame of love is burning in our bosoms as intense
As it burned in the corner of that old rail fence.

—Denver Post.

The Bidding Off of Maria Fairchild.

There'd got to be an auction, Loretty Smith Wilkinson, best way I could fix it. I turned over more 'n a million plans in my mind, till my head felt like a windmill in a stiff breeze, and there wa'n't nothin' that seemed to stand out before my dizzy eyes, 'cept an auction, and I jest thought the sooner I had it the better. Pa's been dead nigh onto a year, and there's all them farm tools goin' to waste for want of bein' used. I shan't never undertake to hire my farm run ag'in, and I can't run it alone. Yes, sir, I'll jest sell all but the house, and garden patch, and one cow, and my bay horse, and have an auction of the farm tools and lots of old furniture and stuff I don't need. Then, Loretty Smith Wilkinson, I shall begin to feel as though I was livin', and had rooom to breathe, and opportunity to breathe, without bein' all cluttered up with that mess of stuff all the time.

"You don't mean to say that you're goin' to keep right on livin' here all alone, Maria Fairchild! What'll you do in tramp time, a quarter of a mile away from the nearest house, and them big dark woods t'other side of you? You're flyin' in the face of Providence!"

"How can I be flyin' if I'm jest stayin', Loretty? Now don't you go to work and worry 'bout me, for after the auction, I've no doubt, I'll be jest as comfortably fixed as you be, and, prob'ly a great deal better."

"Well, don't get huffy, Maria. I did'nt intend to hurt your feelin's any, but I couldn't bear to think of you livin' all alone where nobody'd know if you was took sick or wanted anythin'. Have you decided when your auction's goin' to be?"

"Yes, I'm goin' to have it the 16th of February, and that'll be two weeks from next Friday. Ebenezer Fisher's jest taken notices to the village for me, and his brother Abe's goin' to be auctioneer. I'm powerful sorry I can't ask you to stay this afternoon, but I've got such an awful lot of work ahead of me to git in order for folks as, prob'ly, will be comin' in to warm themselves if it's too cold to stand outside all day, that I'm too drove to spend many minutes visitin' jest now. Then I've got to kinder fresh up a good share of the stuff, so's it'll bring as big a price as possible, and, altogether, I've got my hands full. But I hope to see you at the auction, even if I ain't got nothin' you're likely to want to bid off, and say—Ive jest thought! If 'taint too much trouble, I'd be real obliged to you if you could stay all day on the 16th, and help me make coffee for them as wants it. I'm goin' to make a lot of doughnuts too, for there ain't nobody goin' to say Maria Fairchild's stingy, if she is an old maid, and I guess lots will be thankful for somethin' hot, and somethin' to stay their stomachs, after standin' around in the cold."

"I'll be more'n glad to come and help you, Maria, and I can as well as not. If there's anythin' else I can do for you beforehand, you let me know."

"Yes, I will, thankye, Loretty; good-bye."

After the departure of her visitor, Maria Fairchild went back into the kitchen of the large old home, and began her task of re-varnishing a massive table that, until lately, had adorned the parlor.

In Squire Fairchild's prime, the house had been considered little less than a mansion to those parts, and his extensive farm lands were the pride of the country. Ethan Fairchild had managed well, and, therefore, must be a rich man, concluded his neighbors; but after the death of his wife, the squire took little interest in anything. He rarely left the dooryard during his latter years, and, under the slack attentions of his farm hands, his crops ceased to yield so abundantly, as in previous times, and showed plainly the want of the efforts of the master of the place. Even the the house and the well kept barns and stables began to look forlorn and dilapidated, while the general appearance of shabbiness extended to the animals as well. With rough, unkempt coats, the once sleek horses ambled along with downcast heads, meekly giving up to the spirit of of gradual decline which seemed to prevail. When Maria remonstrated, calling her father's attention to some new evidence of neglect on the part of the hired men, the squire would merely say:

"There, there, Maria, I'll speak to Joe about it. Don't go to fussin' over nothin'. Things will come out straight in the end."

But the result was that things became crooked rather than straight. The fences sagged, posts leaned, scraggly branches drooped—in fact, everything seemed to have become tired and to have settled down for a rest. This feeling, likewise, seized the squire himself, when one day he, too, sank into a peaceful slumber from which he never awoke.

People said that now Maria Fairchild would likely spunk up and marry Jed Tompkins, whom the squire had disliked for no apparent reason than that Jed would deprive him of the daughter who, to the best of her ability, made her father comfortable. But Jed had left the town some years before, and if he had heard of the squire's death, he made no sign.

Then the popular opinion was that anyhow Maria would fix up the place, but when it became known that there really was no money, and that Maria was, indeed, a poor woman, speculations changed to expressions of wonderment as to what she would do, anyway. Then came the announcement of the auction.

"Dear me, Sus!" exclaimed one good soul. "Jest to think! Maria ain't more'n thirty-five if she's that, and to think she' come to this!"

"Well," said another, "I don't see what on earth she's goin' to do when she's sold her furniture. I should 'a' thought she'd kept it and took summer boarders from the city. That furniture's real good if 'tis old. My land! Age ain't nothin' ag'inst stuff like that in the squire's house. That's the kind that gits better instead of worse. Every stick of it's the real genuine wood."

Maria worked industriously. Before the afternoon had gone, several handsome, old-fashioned pieces had received shining coats of varnish, and gleamed anew with restored beauty.

Loretty Wilkinson arrived bright and early on the eventful day, and if she noticed the closed-up appearance of certain portions of the house, she said nothing, but had her thoughts.

"Why, Maria! Where'd you git that stove?" said she, as she caught sight of a peculiar object in the woodshed. "That ain't your show-off parlor stove, is it?"

"Yes, Loretty, it is," answered Maria. "I've got one in there, you know, and this one ain't nothin' but a relic, you might say. I'm 'most in hope nobody'll buy it, for that's the one thing I can't bear to part with; but I ain't thinkin' 'bout it any more'n I can help."

It was a curious article. On top was a mirror mounted like any chiffonier mirror, and at each side was a blue glass vase.

"Them held grasses most of the time," explained Maria, "and how many times I've seen pa shave himself in front of that glass, with his shavin' cup set there to keep warm on the side. But that was 'fore we had the stove in the parlor; after the stove was moved in the parlor we kept a a fire in it only on some occasions, and ma used to joke me about my sparks; but 'tain't a subject I can talk about to nobody."

"Yes, I know," said Loretta. "You was thinkin' 'bout Jed. If I was you I would'nt sell it 'thout I'd got to."

"Maybe I can't let it go, Loretty, but we'll see. There! There's some folks come already, and Abe Fisher's leadin' the way to the barns."

The day was clear but cold. Notices of the auction had been circulated far and wide, and many farmers with their wives had driven in from the surrounding towns, bent on procuring something from the squire's place. The kitchen and the sitting-room were well filled during the greater part of the day, and the steaming coffee and the new doughnuts found ready consumers. Curiosity had brought many, not only to the grounds, but into the house itself, for the reputation of the squire's possessions had led many to see for themselves if the house was stripped from cellar to garret, or whether, as some affirmed, Miss Maria had loads of much better stuff she wouldn't think of selling. The closed doors quenched the ardor of those intending a general survey of the house, but the fact that the coffee was served in Mrs. Fairchild's best old-fashioned sprigged china cups, conveyed the idea that there must be lots of valuable articles retained by the present owner.

The afternoon was half gone, and most of the things were sold. Dishes, substantial milk cans bearing the squire's name, sleighs, carriages, and many articles besides the farm tools and the furniture had been purchased, and yet the stove remained in its corner of the woodshed. Maria saw it as she passed through on errands, and thought she would say nothing about it if Abe Fisher did not see it. She had fully decided she could not let it go.

A little later, as she was getting a cup of coffee for a neighbor, her glance fell on the group outside the window, and she saw with dismay her stove dragged up for display. With a cry she darted through the door and up to the auctioneer.

"Oh, don't sell that, Abe, I can't let it go! It's jest the only part of my life I can't get away from. You mus'n't put it up!"

"It's on the list Maria," said Abe, "and it'll sell all right."

"I know it Abe, but it's like sellin' part of me. It is part of me, you know," she cried wildly. "Oh, no. If you sell that, I go with it!"

"Then I'll bid my hull stock of worldly goods for it!" said a loud voice, and elbowing his way through the crowd, a stranger took Maria Fairchild in his arms.

"It's Jed Tompkins!" gasped the members of the group.

"Yes, sir," laughed Jed, "and he's here jest in time to buy up the most valuable thing in the lot. And see here, you folks, anythin' Maria wants back, I'll buy from you, fer my money's hers and she's got a fortune of her own, too. I may as wall say to cut matters short, that her father privately made over his property to me, some years ago, on condition that I'd keep away and not marry Maria till he was dead, as he couldn't spare her. I've only jest heard of his death, bein' on a long trip out West, and catchin' wind of this auction, I've rode all night and all day to git here. Now you jest leave Maria to me, and to-morrow we'll straighten up the auction business."

"What you goin' to do, Jed?" queried Maria later, as she heard him struggling with something in the shed.

"I'm jest gittin' in the parlor stove ag'in. If I'm goin' to spend the evenin', seems as though a little fire would be good in the parlor. Stovepipe's all right, I see."

"But there ain't no furniture in the parlor," laughed Maria happily.

"I believe I ketched sight of a chair or two as you unlocked the door, Maria, and anyway, all we need's that stove with them blue vases branchin' out at the sides, to make the room look real homelike—and say, we can't git that fire started up any too soon to suit me!"—Ledger Monthly.

To Tell a Good Book.

To tell a good book from a bad one is a troublesome job, demanding, first, a strong understanding; second, a knowledge, the result of study and comparison; third, a delicate sentiment, says Augustine Birrell in Cornhill Magazine. If you have some measure of these gifts, which, though in part the gift of the

FOR OLD AGE

To the old, as to babies, the even balance of health is more important than anything else in the world. The possible health, in age, is not high and strong; it is only even.

There is no end, but death, to the trouble that comes of its loss.

It ought to be watched like a baby's.

Their future is short; but oh how it turns on comfort! on whether the wrinkles are wrinkles of pain or of long serene enjoyment!

Scott's emulsion of cod-liver oil—for very old and very young in different ways—is the food to secure this even condition of health.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

gods, and can avoid prejudice—political prejudice, social prejudice, the prejudices of the place where you could not help being born, the prejudices of the university whither chance sent you, all the prejudices that came to you by way of inheritance, and all the prejudices you have picked up on your own account as you went along—if you can give all these the slip and manage to live just a little above the clouds and mists of your own generation, why then, with luck, you may be right nine times out of ten in your judgment of a dead author, and ought not to be wrong more frequently than perhaps three times out of seven in the case of a living author; for it is, I repeat, a very difficult thing to tell a good book from a bad one; to feel yourself going out in joyful admiration for whatever is noble and permanent, and freezing inwardly against whatever is pretentious, wire-drawn and temporary—this, indeed, is to taste of the fruit of the tree, once forbidden, of the knowledge of good and evil.

The Value of Milk.

It is well known that milk is the most perfect food known, and the only substance provided by Nature that contains all the necessary ingredients for supplying the various constituents required in the human organism. No other single article of food approaches it in this respect, and upon no other substance can life be sustained for as long a period as upon milk. The first demand of the infant is for milk, but here he or she is too often brought to a sudden realization of the deceitfulness of human nature by being compelled to accept as a substitute catnip tea, kummel, sweetened water, or something else "just as good," despite his or her vigorous protests.

Milk to the infant is in every respect the staff of life. In old age there is no one form of food upon which so much reliance can be placed to sustain the diminishing strength of the vital forces as milk. Milk is our main reliance in many conditions. It is the fighter of our battles against disease, and then becomes a necessity instead of a luxury.

Bread has long been regarded as the staff of life, but it falls far short in fulfilling the requirements of the human economy, when compared to milk, though it supplies many of the demands of nutrition in a pleasant and palatable form.

The use of milk is coincident with the earliest history of man, and for centuries was one of the principal articles of food. When the children of Israel were led out of bondage in Egypt to Canaan, "a land flowing with milk and honey," only milk was promised—bread was not on the menu. The use of milk as a food is almost universal. It is demanded by people all over the world, therefore its care and protection against impurities and adulterants, by which it is accidentally or intentionally contaminated, requires stringent regulations on the part of the city or State, and careful attention on the part of the conscientious dairyman to prevent. While milk is one of the most useful of foods, it is also one that is most easily impaired or even rendered dangerous.

Owing to the increased mortality rates from the use of impure milk, especially in children and debilitated persons, the problem of maintaining a standard for milk as near purity as possible is one of the most important and at the same time one of the most difficult with which State or municipal bodies have to contend. The increased care necessary to the prevention of contamination at the time of milking and subsequently entails an additional expense which the dairy keeper is loth to assume until forced to do so by public opinion, but the importance of this substance as a food product demands that no care or expense be spared to get it to the consumer in as pure a state as possible. When pure fresh milk can be had, and at a price not out of the reach of the majority of people, its use will then, indeed, justify the contention that it is the staff of life.—Cour. Med.

Points on Health.

"I don't want to live to be too old," is a common remark, but the reason of this is that old age is apt to be associated with decrepitude, pain and all manner of physical inconveniences. But in one sense, and a very important one at that, old age is simply a question of health. A feeble and effeminate dyspeptic, often ill and likely to be snuffed out before forty, is an older man than the octogenarian who has lived in a way to keep supple, strong, free from ailments, and altogether in the swim, mentally and bodily. The latter is, so to say, eighty years young, while the other is forty years old, and really too old for anything.

All around physical training and rational living habits as to clothing, diet, etc, will secure to most persons a clean, sound, delightful life to the end. William Cullen Bryant probably got as much pleasure out of life as any one could desire, and his life was a most busy and useful one up to the age of eighty-four, when he died in a natural and comfortable manner, like the snuffing out of a candle. He was never ill, he enjoyed his food, exercise was a pleasure, as it is bound to be to every one of us who keeps in training, and he kept young in feeling and socially in the fashion to the last, and all this without doing penance in any shape. His babits were exceptionally wise. Here they are in brief: He rose early, took the air bath that I have practised and taught for a good many years, with light all-around exercises, free arm work, chair swinging, etc., for an hour or less; then a quick sponge bath and good toweling. A light breakfast of fruit and bread, after which a little time was spent with his studies, and then he walked to the office of the Evening Post, nearly 3 miles, and after performing his duties there walked back, "whatever be the weather or the state of the streets," to quote his own words. He used neither tea, coffee, tobacco nor spirits in any form, beyond the rarest exception of a glass of wine. In town, where he dined at six or later, he took but two meals a day. His diet was simple—fruit, vegetables, whole meal bread, with but a modicum of fish, flesh or fowl. "I abominate all drugs and narcotics," he said, "and have always avoided everything which spurs nature to exertions which it would not otherwise make. Even with my food I do not take the usual condiments, such as pepper and the like." Another characteristic of Mr. Bryant, relating to his penchant for physical training—he never took the elevator in his high-up office, but climbed the stairs, as the next best thing to hill climbing.

The entire muscular system requires exercise, and we know that a horse travels with less fatigue any given distance when he has some up and down hill work to do than over a dead level course. The level working muscles, so to say, are resting while the uphill ones are working, and vice versa. To a person tired from over resting exercise is in the highest degree restful. The everlasting loafer and sitter has a tired feeling all the time, which can only be driven away by gradually working up in his activities. It has been observed that the first mile in a walk is done with considerable effort, when the second is done with less, and the third with still less inconvenience, and even with ease. Hence the practice of horsemen of scoring for a race by a few preliminary brushes, the physiological explanation of which is that the animal's muscles are squeezed free from waste matter and left clean and springy for hard and sharp work.—Charles C. Page, in Health Culture.

Yes, He Got the Prize.

At a suburban church function, not long ago, each person was required to wear conspicuously upon his or her clothing some pictorial or other device that should represent in "rebus" form the title of any well-known book, and all the others were to guess at the book intended. A prize was to be given for the most ingenious of these devices.

"Paradise Lost," represented by a card upon which five dice had been pasted, and from which two had evidently dropped or been removed, was easily guessed. "Hard Times" was no puzzle. Neither was it hard to recognize "A Pair of Blue Eyes," "Innocents Abroad," "Vanity Fair," or "Uncle Tom's Cabin," in spite of their pictorial disguises.

One of the guests, however, had a poser. Attached to one of the buttons of his coat was a card bearing simply the inscription: "Ter."

Everyone at last gave it up and asked for the solution.

"Why, that's easy," he said. "It means 'A Tale of Two Cities.'"

"Explain."

"Manchester and Leicester. Last syllables of both. See?"

"That's not fair," said the others. "It's the syllable of Chester, Lancaster, Gloucester, Chichester and Exeter. We protest!"

"Well," he said, "I won't insist. Try this one."

He turned the card over. It was inscribed on the other side with these three letters: "Ans."

After a severe mental struggle everybody gave this up also.

"That ought not to puzzle you," he said. "It's The Last of the Mohicans."

He got the prize.

The Sacredness of a Promise.

It is a matter of great regret that the promises of a great many people are—like pie crust — made to be broken. I need not say that this is wrong, for you know it perfectly well, and yet I dare say it has often happened that when a friend has come to you saying, "There's something I want to tell you awfully, only you must promise first not to tell," you have given that promise without hesitation, and have shortly after forgotten that you gave it, and have repeated the matter; or else have wished that you had not pledged yourself to secrecy, for it was a matter in which secrecy was wrong.

Now to avoid difficulties of this kind the obvious remedy is to be very careful about receiving confidences, and to entirely decline to promise to keep to yourself anything which a friend or acquaintance may tell you, until you know what that thing is. If you do this you will probably hear far less gossip and scandal than you would do otherwise, and you will also be saved making promises too numerous to be always remembered, or which it is your bounden duty to break.

"But can it ever be right to break a promise? I thought a promise was sacred," I hear some one say. To which I answer that a promise ought to be sacred, and that therefore it ought to be made deliberately and conscientiously. You remember, I dare say, the description of a righteous man in one of the Psalms, and how it is said of him that he "sweareth to his neighbor and disappointeth him not, though it were to his own hindrance." That is to say that his promise is binding, even when it involves inconvenience or loss to himself. But the good man knows that he has no right to sacrifice others, and therefore he never makes rash promises, the keeping of which might involve a crime against an individual or against society at large.

A very good instance of the folly of rash promises is that of King Herod, who, pleased at the dancing of Salome, the daughter of Herodias, told her to ask of him a gift, and swore to her that he would give her whatever she asked, even to the half of his kingdom. The girl, prompted by her mother, asked for the head of John the Baptist. We are told that "the king was exceedingly sorry, yet, for his oath's sake he would not reject her." The keeping of this foolish promise, which it was Herod's distinct duty to break, caused him to commit murder.

You perhaps may think that your rash promises could never involve you in a crime like Herod's, but like me remind you that it is as dastardly a deed to kill a man's fair reputation and thus take away from him the joy of life as it is to kill his body. Many a reputation is "done to death by slanderous tongues," so take care that keeping a foolish promise does not involve you in this crime. It might easily happen, and lately a friend of mind had to break a promise of secrecy in order to prevent such a catastrophe.

It came about thus. A lady whom she knew and hitherto respected came to her one day and in confidence told her she had some trouble with a mutual friend, and then went on to make a most serious statement against that person's moral character. My friend knew it to be false, and said so, but her visitor would not retract it, and simply quoted what various acquaintances had said about it. Here was a distinct case of reputation killed, and my friend felt that secrecy on her part would be wrong. She then and there said she could not keep silent, but that she should go to the accused and tell the story, that she might have the opportunity of clearing herself. This she did, and thus the breaking of a rash promise saved an endangered reputation.—Women's Ideas.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Turnip may be served delicately by cutting it while raw with a vegetable scoop and boiling the little balls in salted water until tender, being careful that they keep their shape. Drain, cover with melted butter, a dash of white pepper or paprika and minced parsley.

Warm suds, small shot and some well soaped soft paper is usually all that is required for cleaning cut-glass bottles. But when there are stains that these agents will not remove, a small quantity of muriatic acid may be added to the water in which they are washed. This should be left in the bottle for a day or two, then drain, rinse thoroughly and polish.

Boil a firm white cabbage for fifteen minutes in salted water; pour off and add fresh water; boil until tender; set aside until cold; chop finely. Butter a baking dish and fill with the chopped cabbage. Make a sauce with these ingredients: One tablespoonful of butter, one tablespoonful of flour, one-half pint of water in which the cabbage was first cooked; salt, pepper, four tablespoonfuls of cheese. Stir all the sauce ingredients, except the cheese, over the fire until smooth. Season with salt and pepper; add the cheese, finely grated. Pour the sauce over the cabbage and bake for ten minutes in a quick oven.

Simple and inexpensive dessert dishes are ever in demand. One such is a velvet cream that may be put together in a few minutes, thus economizing time as well as materials. All you will need will be two tablespoonfuls of gelatine, one-half cup water, one pint rich cream, four tablespoonfuls sugar, wineglass of sherry. Oranges give rise to many inexpensive dishes. For instance, make a batter consisting of one-half pint of sweet milk, two eggs, one teaspoonful of baking powder, one tablespoonful of flour. Slice oranges crosswise and dip in batter. Fry in hot lard.

Deafness Cannot Be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that can not be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.

Hall's Family Pills are the best.

SITUATION WANTED.

Young man, 22 years, with practical training and knowledge of farming and fruit growing, and a student of the Agr College in Berkeley, wishes a position of responsibility on some large farm, fruit ranch or vineyard. References furnished. Address W. C. S., care of Pacific Rural Press.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 15, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	73⅝@72½	73¼@72
Thursday	72⅝@70¾	72⅛@70⅜
Friday	71½@70¾	71⅝@70⅝
Saturday	70¾@70⅛	71⅛@70½
Monday	70 @71⅞	70⅝@72
Tuesday	71⅞@70⅝	72⅛@71

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday	5s 11½d	5s 10¾d
Thursday	5s 10⅜d	5s 10½d
Friday	5s 10½d	5s 10 d
Saturday	5s 10½d	5s 9¾d
Monday	5s 10¼d	5s 9½d
Tuesday	5s 10¾d	5s 9¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	—@—	1 05¼@1 04½
Friday	99¼@—	1 04⅞@1 04⅝
Saturday	—@—	1 04⅛@1 03¾
Monday	—@—	1 03⅞@1 04½
Tuesday	—@—	1 03⅞@1 03¼
Wednesday	—@—	1 03⅛@1 03⅜

WHEAT.

Trade in the local wheat market has continued of light volume. Offerings have been of quite moderate proportions, but at the same time the demand at full current rates was still lighter than the supply. The recently improved crop prospects in this State have caused ocean freight rates to rule a little firmer, ships continuing scarce. The latest spot charter reported was at £1 16s. 3d., which is about 2s. 6d. per ton, or a full 2½c per cental, over the lowest rate established on ship charters when dry weather was prevailing. The deep sea tonnage now here and on the way shows a carrying capacity of 300,000 tons, but of this amount the ships in port do not represent over 50,000 tons. This is practically the same supply as a year ago, and crop prospects are much the same as then, although freights at corresponding date last year were about 3s. 9d. higher and wheat about $1.50 per ton lower. Estimates are being made of the amount of the coming crop, but they are necessarily largely guesswork. Whether the yield in this State will prove less than 800,000 tons or over 1,000,000 tons cannot be definitely stated at present, but prospects are for a very fair yield. What is needed is a foreign demand for our surplus at profitable figures. The United States visible supply east of the Rockies is given at 45,761,000 bushels, indicating a decrease of 907,000 bushels for the week.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 99¼@98c.

December, 1901, delivery, $1.04⅞@1.03¾.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at 98c; December, 1901, $1.03⅞@1.03½.

California Milling	$1 02½@1 05
Cal. No. 1 shipping, alongside	98¾@1 00
Oregon Valley	1 02½@—
Washington Blue Stem	1 02½@1 05
Washington Club	1 00 @1 05
Off qualities wheat	97½@1 00

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s3d@6s3½d	6s1½d@6s2d
Freight rates	40@——s	35@36¼s
Local market	$0 93¾@ 96¼	$0 98¾@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is a fair outward movement, principally to South American countries and to China, but trade on local account is hardly up to the average. Labor strikes, present and prospective, are interfering with business in this as in other lines. Values remain quotably unchanged, but market shows no noteworthy firmness.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

Values for feed descriptions have averaged a little lower than preceding week, and it is queer that it is so, as there is no other cheap feed obtainable. The demand is slow, however, and only to cover most immediate needs of millers and dealers. While offerings are far from heavy, they are proving sufficiently ample to give buyers of Feed Barley the advantage. As to brewing grades, they are held practically the same as for some time past, with no great quantities presented for sale, but inquiry is light, and there is almost an entire absence of competition between buyers. The option market was slow, and the general trend of prices for futures was in favor of the buying interest.

Feed, No. 1 to choice	77½@ 80
Feed, fair to good	76¼@ 77½
Brewing, No. 1 to choice	82½@ 85
Chevalier, No. 1 to choice	—@—
Chevalier, No. 2	—@—
Chevalier, poor	—@—

OATS.

Market continues firm, especially for desirable qualities. Stocks are of very moderate volume, and are mostly of common to medium grades. At the comparatively stiff values now current, however, not many Oats are required to satisfy the demand. There is nothing to warrant anticipating these figures to hold when new crop comes upon the market.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 35 @1 42½
White, poor to fair	1 25 @1 32½
Gray, common to choice	1 30 @1 42½
Milling	1 42½@1 50
Surprise, good to choice	1 45 @1 52½
Black Russian	1 12½@1 30
Red	1 30 @1 45

CORN.

Quotable values are still higher than last noted. While buyers show no disposition to take hold freely at these figures, it is not probable that any very marked declines will be experienced in the near future. As for some time past, most of the Corn offering is Eastern product.

Large White, good to choice	1 40 @1 45
Large Yellow	1 40 @1 45
Small Yellow	1 55 @1 60
Eastern, in bulk (carload lots)	1 30 @1 35

RYE.

Little coming forward, but there is at present scarcely any inquiry. Market lacks strength, quotable values remaining at a low range.

Good to choice, new	80 @ 82½

BUCKWHEAT.

Market is lifeless, and values in consequence are for the time being not very clearly defined.

Good to choice	1 85 @2 00

BEANS.

There is little doing in the bean market, and not likely to be much business for the next 90 days, or until new crop beans begin to come forward. Present stocks of white beans and Limas are entirely too small to admit of any great amount of trading, and they are held too high for buyers to attempt to take hold in either a speculative or wholesale way. Offerings of colored beans are principally Pinks and Bayos, and for these varieties the market is rather favorable to buyers. Quotable rates show no appreciable changes, but at present are based mainly on asking figures or the ideas of holders.

Pea, fair to good, 100 lbs	4 75 @5 00
Small White, good to choice	4 75 @4 90
Lady Washington	4 00 @4 15
Butter	5 00 @6 00
Pinks	1 40 @1 65
Bayos, good to choice	2 25 @2 50
Reds	3 00 @3 25
Red Kidney	4 25 @4 50
Limas, good to choice	6 25 @6 40
Black-eye Beans	2 75 @3 00
Horse Beans	1 25 @1 50
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

Market is lifeless at nominally unchanged values. There are practically none now offering from first hands.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

Shippers and scourers are both operating, and while the market might be more active, wools are changing hands about as rapidly as can be reasonably expected, or as fast as they can be handled to advantage. There is not much desirable shipping stock of this year's clip now remaining here unplaced. Scourers are taking hold of heavy and defective wools, and are likely to have their plants running on full time for some weeks to come. Values are ruling steady, and there is nothing to warrant anticipating any special changes in quotable rates during the balance of the season.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

Market is inactive, with values nominally the same as previously noted. There are virtually no holdings of last year's hops by growers and not many remaining in second hands. In contracting new to arrive there is not much doing, dealers and growers being apart in their views. Bids on new to arrive are within range of 10@13c. for choice to select.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

The first carload of new grain hay, Barley and Oat mixed, and of good average quality, arrived Saturday last and brought $8 per ton. New volunteer oat, stained, sold at $7. Daily receipts of new of fair magnitude are looked for from this time forward. Values are being tolerably well maintained, considering the fine prospects for a good average yield this season.

Wheat	8 00@13 00
Wheat and Oat	8 00@11 50
Oat	7 00@11 00
Barley	6 00@ 9 50
Volunteer	5 00@ 8 00
Alfalfa	7 00@ 9 00
Stock	4 50@ 7 00
Compressed	8 00@12 50
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

Supplies of Bran and other mill offal were not heavy and were in the main steadily held, the bulk of the stock being in few hands. Prices for Rolled Barley and Milled Corn were without appreciable change, the latter continuing on a high plane.

Bran, ₱ ton	16 00@17 00
Middlings	17 50@19 00
Shorts, Oregon	16 50@17 50
Barley, Rolled	17 50@18 00
Cornmeal	28 00@—
Cracked Corn	29 00@—

SEEDS.

There is little doing in this line at present, as much or more due to the very limited supplies now on hand than to any other cause. Mustard is too scarce to quote. Alfalfa is meeting with no demand, and there is not much of the same on hand. Business in Bird Seed is largely of a retail character and at generally unchanged values.

	Per ctl.
Mustard, Trieste	—@—
Mustard, Yellow	—@—
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag market shows much the same condition as preceding week, continuing moderately firm at prevailing rates, with a fairly active demand. Spot bags are now held at practically the same figures as June-July deliveries, owing to the time for latter being so near at hand.

Calcutta Grain Bags, buyer June-July	7 @ 7¼
Calcutta Grain Bags, spot	7 @—
San Francisco Grain Bags, 22x36, spot	6⅞@ 7
State Prison Bags in lots of 2000, ₱ 100	5 65 @—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

The market for Hides and Pelts presents a little better tone, in sympathy with improved conditions East, but the change for the better is more in the demand than in prices obtainable, offerings moving more freely. Tallow does not lack for custom at prevailing rates.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½@10	8 @8½
Medium Steers, 48 to 56 lbs	8½@ 9	7 @7½
Light Steers, under 48 lbs	8 @ 8½	6½@7
Heavy Cow Hides, over 50 lbs	8½@ 9	7 @7½
Light Cow Hides, under 50 lbs	8 @ 8½	6½@7
Wet Salted Kip	9 @ 9½	7 @7½
Wet Salted Veal	9½@10	7½@8
Wet Salted Calf	10 @—	9 @—
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	80	@1 00
Pelts, medium, ₱ skin	60	@ 75
Pelts, short wool, ₱ skin	30	@ 55
Pelts, shearling, ₱ skin	10	@ 30
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3	@ 3¼
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

No large quantities of new honey have yet put in an appearance, but the anticipation of heavy receipts at an early day is imparting a weak tone to the market. Free purchases are not possible, however, at current quotations, and dealers may find it necessary to pay better prices than now nominally current before securing any considerable portion of this year's crop.

Extracted, White Liquid	5 @ 6
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
White Comb, 1 lb frames	11 @12
Amber Comb	8 @10
Dark Comb	6 @ 7

BEESWAX.

Spot stocks continue of small proportions, and while demand is not particularly brisk, buyers find it necessary as a rule to pay full current figures.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Market for Beef has ruled quiet, and while not quotably lower, firmness has been lacking. Mutton was in ample supply and market was easy in tone at quotably unchanged rates. Prices for Lamb ruled fairly steady. Veal was not in heavy receipt, but prices showed no improvement. Hog market tended in favor of buyers, with arrivals of Eastern and domestic fairly liberal, and more than sufficient for the immediate demand at full current rates.

Beef, first quality, dressed, net ₱ lb	7½@—
Beef, second quality	7 @—
Beef, third quality	6½@ 7
Mutton—ewes, 6½@7½c; wethers	7 @ 8
Hogs, hard grain fed, medium	6¼@—
Hogs, small, fat	6¼@—
Hogs, large, hard	5¾@ 6
Hogs, feeders	—@—
Hogs, country dressed	7½@ 7¾
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	8½@—

POULTRY.

The market as a whole has not been favorable to the selling interest. Large and fat young chickens, more particularly full-grown Young Roosters, free from spurs, sold to advantage, with light arrivals of this description. But market for most other kinds of poultry was slow and devoid of firmness. Common old fowls and small young birds were in larger receipt than the demand warranted and sold as a rule at rather low figures.

Turkeys, live hens, ₱ lb	11 @ 12
Turkeys, live gobblers, ₱ lb	8 @ 10
Hens, California, ₱ dozen	4 00 @5 00
Roosters, old	4 00 @4 25
Roosters, young (full-grown)	6 00 @7 00
Fryers	4 50 @5 00
Broilers, large	3 50 @4 00
Broilers, small	1 75 @2 50
Ducks, old, ₱ dozen	3 50 @4 00
Ducks, young, ₱ dozen	4 50 @5 50
Geese, ₱ pair	1 25 @1 50
Goslings, ₱ pair	1 25 @2 00
Pigeons, old, ₱ dozen	1 50 @1 75
Pigeons, young	1 50 @1 75

BUTTER.

A little easier tone prevails in the butter market, with demand on packing and cold storage account on the decrease. There are no noteworthy accumulations, however, of desirable grades of either creamery or dairy product. There are no special changes in quotable rates, neither is it probable that values will recede materially below current levels.

Creamery, extras, ₱ lb	17 @18
Creamery, firsts	16 @16½
Creamery, seconds	— @—
Dairy, select	16 @16½
Dairy, firsts	15½@16
Dairy, seconds	— @—
Dairy, soft and weedy	— @—
Mixed store	13 @—
Creamery in tubs	17 @19
Pickled Roll	— @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

Supplies of regular flats are of quite fair proportions, and are larger than immediate custom can be found for at full figures. Small cheese are not in heavy stock, but demand for them is not very active at the prices asked.

California, fancy flat, new	9½@—
California, good to choice	9 @ 9½
California, fair to good	8½@ 9
California Cheddar	— @—
California, "Young Americas"	9½@10½

EGGS.

Demand has been rather slow, not only on speculative account, but also for imme-

diate use. Trade has been materially and unfavorably affected by the strike of waiters and bakers. There were more eggs offering than could be placed at the going rates.

California, select, large, white and fresh.	16 @—
California, select, irregular color & size.	14½@15
California, good to choice store	13½@14

VEGETABLES.

Market was well supplied with most kinds of Spring vegetables and was in the main favorable to buyers. Especially were Asparagus, Green Peas and Rhubarb in liberal receipt. Green Corn, the first of the season, arrived Tuesday from Winters and was reported sold at 50c. per doz. New Red Onions arrived freely and sold at a material decrease from recent rates. Old Onions were in very light stock, mostly Australian, and were firmly held.

Asparagus, ℔ box	50 @1 50
Beans, String, ℔ lb	2½@ 4
Beans, Wax, ℔ lb	4 @ 7
Cabbage, choice garden, ℔ 100 lbs	75 @1 00
Cauliflower, ℔ dozen	50 @ —
Cucumbers, ℔ doz	50 @ 65
Egg Plant, ℔ lb	10 @ 15
Garlic, ℔ lb	5 @ 15
Onions, Yellow Danver, ℔ cental	3 50 @4 00
Onions, Australian, ℔ cental	4 50 @4 75
Onions, New Cal. Red, ℔ cental	75 @1 10
Peas, Sweet garden, ℔ lb	2 @ 2½
Peas, good to choice, ℔ sack	75 @1 00
Peppers, Green Chile, ℔ lb	6 @ 10
Rhubarb, ℔ box	50 @ 75
Rhubarb, Mammoth, ℔ box	1 00 @1 25
Squash Summer, ℔ box	1 00 @1 50
Tomatoes, ℔ box	75 @1 50

POTATOES.

Market for old potatoes has not varied materially, either in quotable rates or general tone, since last review. Offerings were not large, and were mostly in few and strong hands, but buyers took hold sparingly at the rather stiff prices asked for desirable stock. Strictly fancy Burbanks were hardly obtainable, and were salable above utmost figure warranted as a regular quotation. New potatoes have been coming forward more freely but prices were very little lower than preceding week. Sweets continued plentiful and values remained at low levels.

Burbanks, River, ℔ cental	85 @1 25
Burbanks, Petaluma-Tomales, ℔ ctl.	1 00 @1 30
Burbanks, Oregon, lb cental	1 30 @1 65
New Potatoes, ℔ cental	1 50 @2 00
Sweet Potatoes, Yellow, ℔ cental	60 @ 75

The Fruit Market.

FRESH FRUITS.

Early Summer fruits are beginning to make a fairly good display, both as to quantity and variety. Cherries made the most liberal showing of tree fruit, with the quality averaging better than preceding week, as did also the price. Some very choice Black Cherries brought $1.25 per box. Pringle Apricots were not in heavy receipt and some were not sufficiently ripe to be desirable. Most of the Blackberries and Raspberries on market were from Newcastle, and the Currants from San Leandro. Common Gooseberries were rather plentiful. Some Strawberries arrived from Florin, the quality being very good, and they brought mainly $1.00@1.25 per crate. Ben Davis Apples from Chicago in California boxes were offered $2.50@2.75 per box. Green Apples are beginning to arrive. The minimum carload weight of deciduous fruits going East has been reduced to 24,000 lbs., being formerly 26,000 lbs.

Apples, fancy, 4-tier box	1 75@ 2 25
Apples, good to choice, ℔ 50-lb box	1 00@ 1 50
Apples, common to fair, ℔ 50-lb box	—@—
Apricots, Pringle, ℔ box	1 00@ 1 75
Blackberries, ℔ crate	1 75@ 2 00
Cherries, Black, ℔ box	50@ 1 00
Cherries, White, ℔ box	35@ 60
Currants, ℔ crate	75@ 1 00
Gooseberries, common, ℔ lb	3@ 5
Raspberries, ℔ drawer	75@ 1 00
Strawberries, Longworth, ℔ chest	7 00@10 00
Strawberries, Large, ℔ chest	4 00@ 6 00

DRIED FRUITS.

The spot market for cured and evaporated fruits is far from being in satisfactory state, or as holders and producers generally would have it, if they were permitted to shape affairs to their suiting, but at the same time the market for most kinds of dried fruit could be in worse condition than it is at present. Although there has been in the general market no active trading for some time, there has been a slow, steady movement, which for the past two or three months foots up an aggregate of very respectable proportions. The result is that to-day, barring Prunes, choice to select dried fruit is difficult to obtain in anything like noteworthy quantity, and while the market is not quotably higher for the ordinary run of offerings, high grade fruit inclines in favor of sellers, and most desirable is salable above quotations, but there is so little of this sort obtainable that to mark up prices would be misleading. Choice Apricots, Apples and Pears are all scarce, and there are not many high grade Peaches or Plums offering, but fair quantities of the lower grades, and for the latter sort the market displays no firmness, dealers showing no special disposition to purchase other than strictly choice. Where the more common qualities are taken hold of, sellers as a rule have to accept low figures, and, in not a few instances, less than quotations where stock is crowded upon the market. Prunes are moving slowly, and while officially quoted on a 3c. basis by the Growers' Association, sales are mainly on a 2¼c. basis for other than the large sizes, with business in the latter mostly on a 2½c. basis.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6 @ 6½
Apricots, Royal, choice, in sacks, ℔ lb	7 @ 7½
Apricots, Royal, fancy	—@—
Apricots, Moorpark	9 @10
Apples, in 50-lb boxes, rings, pressed, fancy	4½@ 5
Apples, 50-lb boxes, rings, pressed, good to choice	3 @ 4
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, choice	4 @ 4½
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, halved, fancy	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	4 @ 5
Plums, White and Red	5 @ 6
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	4 @ 5
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	2 @ 3
Figs, White	2½@ 3½
Peaches, unpeeled	3 @ 5
Pears, prime halves	2 @ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No. 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s, 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

A very quiet market is reported. Outside of moderate transactions in 5¼c. seeded raisins, there appears to be for the present practically nothing doing. The official card rates of the Raisin Growers' Association show no change.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—
(Usual advance for fractions.)	
Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½
(Above prices for loose raisins are for 50-lb boxes.)	
Seeded Raisins, 1-lb packages, ℔ lb	5¼@—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10½c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Orange market was heavily stocked and weak for common grades, while strictly choice to select Navels commanded slightly better figures than had been ruling. Lemon market showed no appreciable improvement, either in general tone or in quotable rates, supplies continuing liberal, with demand only moderate. Limes were offered freely and at rather low figures.

Oranges—Navel, ℔ box	1 25@2 50
Seedlings, ℔ box	75@1 25
Tangerines, ℔ box	75@1 25
Grape Fruit, ℔ box	75@1 50
Lemons—California, select, ℔ box	1 75@2 00
California, good to choice	1 50@1 75
California, common to fair	75@1 25
Limes—Mexican, ℔ box	4 00@4 50
California, small box	—@—

NUTS.

Nothing new in this department. Almond market is quiet but firm. Walnuts are practically out of stock and not quotable. Peanuts are in fair request at unchanged values, with spot supplies of rather light proportions.

California Almonds, shelled	18 @22
California Almonds, paper shell, ℔ lb	12 @14
California Almonds, soft shell	10 @12
California Almonds, hard shell	6 @ 7
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

In the way of transfers of Wine from first hands there is practically nothing doing, for the very substantial reason that nearly all growers have disposed of their holdings. For dry Wines of last year's vintage the market is firm at nominally unchanged values, 22@25c per gallon. That the coming crop will bring good figures is as well assured as anything in the future can be. It is doubtful if strictly choice Northern wine grapes could now be secured for forward delivery at $20 per ton. The steamer Argyll, sailing Monday for Panama, took 324,000 gallons Wine, the bulk of the shipment being for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	129,563	5,741,270	5,623,477
Wheat, centals	89,572	7,141,680	5,968,103
Barley, centals	22,640	3,444 398	4,834,923
Oats, centals	1,855	593,115	724,449
Corn, centals	1,876	102,315	128,751
Rye, centals	...	112,042	96,742
Beans, sacks	1,992	536,406	354,283
Potatoes, sacks	18,954	1,414,882	1,131,067
Onions, sacks	3,084	162,306	148,405
Hay, tons	2,287	145,696	140,736
Wool, bales	1,745	49,215	50,057
Hops, bales	...	8,234	10,243

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	90,678	3,357,460	3,775,446
Wheat, centals	84,166	6,817,628	5,236,832
Barley, centals	2,530	1,954,639	3,790,491
Oats, centals	668	49,101	43,946
Corn, centals	366	3,538	18,337
Beans, sacks	327	13,317	25,455
Hay, bales	222	85,959	130,464
Wool, pounds	...	1 031,218	4,324,433
Hops, pounds	19,973	560,820	1,009,637
Honey, cases	10	1,809	3,530
Potatoes, pack's	646	129,440	70,718

Rotary Disc Plows.

All the plow manufacturers have been making experiments of this style of plow, and this is evidence that they see sufficient merit in the principle of the disc plow to try to determine if they can make the plow so that it will do good work under all conditions. The Benicia Agricultural Works of Benicia, Cal., evidently have struck upon the right model, for they have placed orders to put up over 1000 of these plows for next season. From all accounts, it will be a surprise to other disc plow manufacturers, and many applications for agencies are already being made to the selling agents, Baker & Hamilton, San Francisco, Sacramento, Los Angeles. *

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HAVE A HALF MILLION FOR SALE.

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The Casting of a Large Bell.

Herewith is an illustration of the casting of a large bell. The picture was taken as the hot metal was being poured into the mold. The bell is for the United States Lighthouse establishment, and is intended for the north end of Alcatraz island, San Francisco bay. It is made of genuine bell metal, as this metal, which is composed of copper and tin, has been found to produce the clearest and longest continued vibrations of any metal known. The weight of this bell is 3300 pounds, and it was made by W. T. Garratt & Co., brass and bell founders, of San Francisco, Cal.

British Market for Horses.

Consul-General Guenther writes from Frankfort, March 29, 1901: "In consequence of the South African war, horses are in great demand in England. Between October, 1899, and the 31st of January, 1901, 35,775 mares and geldings and 3627 stallions were bought in the United Kingdom for South Africa; other countries furnished 36,314 mares and geldings and 35,516 stallions for the same purpose. The British horses, especially those from Ireland, are said to have been the most desirable, those from the United States and Canada following."

"We make the most fencing because we make the best. The kind you want. Write American Steel & Wire Co., San Francisco, Cal."

Casting a Large Bell.

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Glenn County, : : : : California,

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The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

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3½-4-5 Foot.

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It Does Not Push the Pit Through the Fruit,

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The Advantage of This Machine is Very Apparent,

as one machine and one man practically represent fifteen or eighteen cutters. This perfect machine, which is guaranteed, is the result of ten years experimenting and improving. These machines will be rented for the fruit season for $50 each; for sale at $150 f. o. b. Los Angeles. If it is not satisfactory after two days' trial it can be returned and the money refunded. Address

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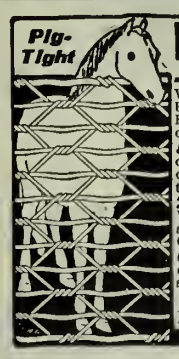

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THE STOCK YARD.

Superiority of the Hereford Grade for Beef.

There is no argument more convincing than one whose premises are supported by dollars and cents, and the following account of an experiment at the Iowa Agricultural College clearly demonstrates the difference in cash returns that may be expected from feeding an animal of the most improved beef type, such as the Hereford, and in feeding a scrub. While in this incident the two extremes, perhaps, are used, the result is not an unusual one.

"A Hereford steer made a gain of 2.03 pounds per day under feed, and was sold at twenty-four months, weighing 1624 pounds. A high-grade Jersey steer under like conditions was sold at thirty-three months, weighing 1300 pounds, and for the nine months fed made a gain of two pounds per day. The amount of feed given each of the animals was practically the same, and the feed-lot results were practically equal. The gain in weight depends solely on digestion, and the digestion of the unimproved steer or scrub may be just as good or even better than the highly improved beef breeds. There is no reason that the latter should give greater returns for the feed. But when these steers were marketed there was a great difference. The comparison was by altogether a different standard. The Jersey sold at $2.12½ below the top of the market and the Hereford for 10 cents above, making a difference of $2.22½ per hundred pounds. In the sale of the two types the Hereford netted 67½% of beef and the Jersey 57½%, the beef type having 10% more beef. When the carcasses were hung up that of the Jersey weighed 763 pounds, with 190 pounds of internal tallow and 55 pounds of suet, while the Hereford carcass weighed 888, with 95 pounds of internal tallow and 38 pounds of suet, the percentages of these as compared with the carcass being respectively 32.1 and 15, the proportion of tallow and suet in the Jersey being more than twice as much as in the Hereford. A great point was in the gain of the choice cuts in the beef type—the power of these animals to make the kind of product the market demands—instead of the Jersey putting the gain in tallow while there was not enough flesh on the back to decently cover the bones. The market returns from the Hereford carcass were 49% more than from the Jersey carcass. The tallow price was 4 cents while that of the high-priced cuts was 19 cents."

The Hereford Shows and Sales.

Secretary Thomas, of the American Hereford Breeders' Association, writes us that at a recent meeting of the committee that will have the series of Hereford shows and sales this fall in charge, a ruling was made that is of considerable interest to prospective exhibitors. During the past shows it was permissable for a large breeder to show as many entries in a single class as he desired and had cattle eligible. By the recent ruling this will not be permissable this fall, as each breeder will not be allowed more than one entry in each class. This will put the breeder with a few head on an equality with the larger breeder, as each can show only his best animal and can win but one prize in each class. It will also tend to distribute the prize money more generally among the various exhibitors, and prevent any two or three men from securing the major portion. Under this favorable circumstance it is hoped that many of the Hereford breeders who have not been in the habit of showing will make an exhibit this fall.

Burton Centrifugal Pumps

are the Standard; they are guaranteed to pump more water with the same power than any other pump, any quantity, any height.

HORIZONTAL AND VERTICAL, SINGLE AND COMPOUND.

BURTON PUMP & MACHINE WORKS, 44-46 MAIN ST., SAN FRANCISCO.

Elgin Watches sold by jewelers everywhere in various sizes and styles. Prices to suit. Send for free booklet. Elgin National Watch Co., Elgin, Ill.

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EVERY large user of separators in the country is now using and buying De Laval machines exclusively. Nearly all have tried various "cheaper" separators and cast aside thousands of dollars worth of them. The same thing is true in Europe and throughout the world.

The dairy or farm user may well profit by experience of such large users. The difference between a superior and an inferior separator is just as material on the farm as in the creamery. But the small user may be hoodwinked or fail to appreciate the difference, while the big user can't long overlook it.

Send for a 20TH CENTURY catalogue and see for yourself what the big users of separators are doing.

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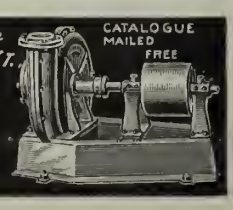

Patrons of Husbandry.

Universal Church.

Written for the PACIFIC RURAL PRESS by M. J. WORTHEN.

I went to church this morning,
To the Temple of Nature's God,
The church was by the hillside,
My seat the bright green sod.

No usher showed me where to sit,
Or scanned my threadhare clothes,
For I was there to worship God,
And worship as I chose.

A choir of feathered songsters
Was singing above my head;
They sang: "He careth for us,
He sees that we are fed.

"Think ye the God who made us
And heeds the sparrows fall,
Thinks ye are of less value
Than we who are so small?"

Lilies of white and purple,
That never toiled or spun,
Praised Father, Son and Holy Ghost,
And praised the Three in One.

I saw that the hills eternal
Lifted their heads in prayer,
And God's own benediction
Filled earth and sea and air.

I bowed my head before Him,
At the close of that holy hour,
And gave to God true worship
With bird and hill and flower.

San Jose.

Tulare Grange.

TO THE EDITOR:—The regular meeting of Tulare Grange was held in its hall on Saturday, the 4th inst. The third and fourth degrees were conferred on a class of four. A committee of five was appointed to arrange with Giant Oak Grange for a picnic on the 18th inst. Arrangements were made for Children's Grange Day the first Saturday in June.

The subject of "Free Rural Mail Delivery" was considered, but Bro. Holcomb, who, at the last previous meeting, was appointed to inquire into it, reported that the conditions of the post-office department, as to distance and number of families, cannot be yet complied with.

The May subject—"Why Do We Favor the Introduction of Nature Studies in Our Public Schools and What Can We Do to Secure It?"—was considered. After a full discussion of the subject, it was

Resolved, That, in the judgment of the members of this Grange, more attention should be given in our public school to nature studies; that this instruction need not necessarily interfere with other essential studies, but that the teaching of them can be made both useful and interesting to the students.

A letter of thanks was read from the floral committee of the late Floral Carnival to the Grange, for premium offered and assistance given the Carnival.

The Secretary read an article from the World's Work Magazine on methods and results of propagating new varieties of wheat, as practiced by the U. S. Experimental Station of Minnesota and by Vilmorin, an eminent agricultural investigator of France, perhaps second only to our own Luther Burbank. This gave rise to an interesting discussion of methods of cultivation, as practiced by the experimental station, by the investigator and by the practical farmer, and that of the conditions of climate and soil in its effects on qualities of the crop.

It was conceded the farmer has first to consider the articles for which there is a commercial demand and whether his soil and climate justify his production of such. These are essential to his success in business.

The June subject for consideration is, "Why Is Our Agricultural College Entitled to the Support and Patronage of Our Farmers, and in What Way Does a Training at an Agricultural College Benefit a Young Farmer?" J. T.

LEE D. CRAIG,
Notary Public and Commissioner of Deeds,
316 MONTGOMERY STREET,
Bet. California and Pine, SAN FRANCISCO, CAL.

Holstein-Friesian Association.

The sixteenth annual meeting of the Holstein-Friesian Association of America will be held at the Yates Hotel, Syracuse, New York, on Wednesday, June 5, 1901, at 10 o'clock A. M., for the election of officers and the transaction of any other business which may legally come before it. All persons interested in Holstein-Friesian cattle, whether members of the association or not, are most cordially invited to attend this meeting.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of **EVERY butter contest** at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. **F. H. Burke**, 626 Market St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs. Poultry. **William Niles & Co.**, Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

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J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: Barred Plymouth Rocks and Single-Comb White Leghorns. Write for wants. Fine roosters for sale. Eggs $1.50 per setting of 15. Incubator lots $5.00 per 100.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

FOR THOROUGHBRED FOWLS in small lots, address Cottonwood Farm, Pleasant Grove, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

MEAT MEAL. Best quality. Lowest price. A. Warren Robinson, Napa, Cal.

BRONZE TURKEYS. Ed. Hart, Clements, Cal.

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S. P. LINDGREN & SONS, Kingsburg, Cal. For sale, Poland-China pigs from registered stock.

BERKSHIRE HOGS, headed by the great boar Artful Lee 52630. S. B. Wright, Santa Rosa, Cal.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. **Wm. Niles & Co.**, Los Angeles, Cal. Established in 1876.

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R. H. CRANE, Santa Rosa, Cal. Breeder and importer of South Down Sheep.

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POULTRY supplies of all kinds. Send for my new price list and booklet, **"HOW TO FEED FOWLS FOR PROFIT."** **CROLEY**, 508 Sacramento St., San Francisco, Cal.

Publishers of the "Pacific Coast Poulterers' Hand-Book and Guide." PRICE 40c.

Manufacturers of Pacific Incubator and Brooder, Send for Catalogue.
OAKLAND POULTRY YARDS,
1317 Castro St. Oakland, Cal.

JUST AS NATURAL as the old hen and a good deal more reliable. Doesn't break its eggs or make its chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched. **THE PETALUMA INCUBATOR** is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 54 to 324 eggs. **WE PAY FREIGHT ANYWHERE** in the U. S. Handsome catalog free. Petaluma Incubator Co., Box 217 Petaluma, Cal.

No wind mill has ever met with such unqualified endorsement or sprung so quickly in popular favor. The cause is not far to seek. It is due to superior material and construction and the introduction of an entirely new and improved system. The **wonderful double gear**, adding double strength, double power, etc. The long bearings with interchangeable boxes which may be easily replaced without removing any part of the mill. Even distributed load. No overhanging strain or torsion. Stands the severest storms without bending or buckling. These are but a few of the leading features of the **Samson**. This is the last appearance of the Samson advertisement for this season. Do not fail therefore to send at once for our free **Samson Art Catalogue** and keep it for future reference.

Stover Mfg. Co., 568 River St., Freeport, Ills.

From Yerba Buena Herd, Santa Clara County, Owned by Henry Pierce, 728 Montgomery St, San Francisco, California.

ESTABLISHED 1870.

EL TORO OF YERBA BUENA--Prize Winner from Calif to Sweepstakes.

SCORE OF FOUR GREAT BULLS,

Furnished by Maj. Henry E. Alvord, of the Animal Bureau, Washington.

New Scale of Points for Bulls and Heifers.

Adopted by the American Jersey Cattle Club at the Annual Meeting, held May 6, 1885.

	Perfection	El Toro of Y. B. No. 24,434 Calif State Fair, Sept. 1897.	Mahkeenac 2d. Madison square Garden, Nov. 1895.	Major Appel Pogis. Madison Square Garden, Nov. 1895	Pedro Madison Square Garden, Nov. 1895.
		Score.	Score.	Score.	Score.
1—Head small and lean; face dished, broad between the eyes and narrow between the horns	2	2	2	2	1
2—Eyes full and placid; horns small, crumpled and amber colored	1	¾	1	1	1
3—Neck thin, rather long, with clean throat and not heavy at the shoulders	8	7¼	7	7	5
4—Back level to the setting of the tail	1	1	1	1	¾
5—Broad across the loin	6	6	5	6	6
6—Barrel long, hooped, broad and deep at the flank	10	10	7	8	8
7—Hips wide apart; rump long	10	9	8	9	8
8—Legs short	2	2	2	2	2
9—Tail fine, reaching the hocks, with good switch	1	1	1	1	¾
10—Color and mellowness of hide; inside of ears yellow	5	4½	5	4½	3
13—Teats rather large, wide apart and squarely placed	10	8½	10	8	2
15—Disposition quiet	5	5	5	4	5
16—General appearance and apparent constitution	10	10	9	10	9
	71	67	63	63½	52

For further information, address HENRY PIERCE, 728 Montgomery St., San Francisco, Cal.

THE LYNWOOD HERD OF SWINE

is still in the lead. Reports from the THREE GREAT FAIRS of the Pacific coast show that after meeting the best herds in California, Oregon and Washington, we can rightfully claim to have the **Champion Herd** of the coast. Look at the record: California State Fair, 15 ribbons; Oregon State Fair, 18 ribbons; San Francisco and San Mateo Fair, 20 ribbons, making a total of 53 ribbons. Our large sales to visitors to the fairs show what they thought of the stock, and we have very few salable pigs left. If you are in need of stock, write us and we will describe what we have.

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FOR POULTRY.

We have put in new machinery especially adapted for the manufacture of this Pure Meat Meal. Our stock is received fresh every morning and in five hours it is sacked and ready for shipment. Ours is the *only genuine odorless* Meat Meal on the western market. Sample free. Try it for your poultry.

N. OHLANDT & CO., Indiana and Yolo Sts., San Francisco. (*Successors to Emery Fertilizer Co.*)

COTSWOLD RAMS.

Eighty head of imported Cotswold Rams for sale.

May be seen at Crows Landing on San Joaquin river. For mutton lambs they are unexcelled.

Inquire of KIRKPATRICK & WHITTAKER, Stockton, Cal.

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FOR UNFINISHED ROOMS.

Ingrain effect. In blue, terra cotta, green and red. Put on with tacks or mouldings; no paste. Covers any rough surface Write for samples and prices.

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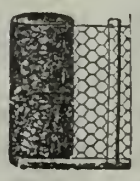

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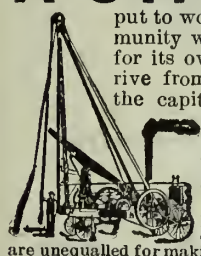

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ALONG THE ROAD

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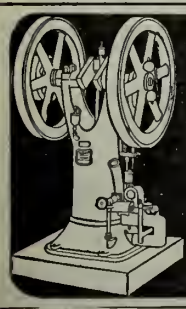

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We are the largest manufacturers of Steel Wheels and Truck Wagons in the World. Write for Catalogue.
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The Prune Association.

To the Editor:—I desire to answer "Viator" of Cupertino in your valuable paper of May 4 on the prune question. As to the failure or success of the Association, I disagree with him, for I think it can be made a success and that we can regulate the supply and demand and control the prices, but we must first start on a proper business form. We must not do as the Association has been doing, selling the small prunes first; but I will try to outline the way to success in the future.

First, we advocate prunes as four sizes, yet they make seven or eight, which is deception to start with. First regulate the sizes with a first size from 25s to 50s, second size from 50s to 70s, third size from 75s to 100s, fourth size from 100s and up. Then we would have the four sizes we advertise and no deception.

When the Association has charge of the fruit offer nothing for sale but size No. 1; when sold, put on the market size No. 2, and no other; when sold, put size No. 3 on the market, and no other; and when sold, if the market is satisfied, just make wine or feed to the swine lot No. 4, and by so doing we can control the supply and demand and we always have the very best fruit on the market, which will keep all of the small prunes out of the market. I would regulate the price in this way: First, put the price on No. 1, I would suggest, 8 cents; on No. 2, 6 cents; on No. 3, 4 cents; No. 4, 2 cents, if sold at all, but I would say never sell them at all. Let them be made into wine or brandy on shares and then sell the product, and by so doing they will never reach the jobbers' hands. We must run our own business and then we can control the market, regulate the supply and demand, and by so doing we can set the prices for the first three sizes high enough so that we can afford to feed the small ones to the swine or dump them into the bay.

I am a reader of the Pacific Rural Press and a fruit raiser, and I have prunes in the combine. I desire it to be a success, as I know that unless it is made so we will have to dig up prune trees, for if the jobbers control us we must be their slaves. This is a free country and I want my freedom; therefore, let every fruit grower stand firm for the Association and back it with both fruit and money, if needs be, for we know that it is done for a good cause. We must admit that the management has been wrong, but we must all live and learn. There never was anything done or made that could not be changed for the better, so let us elect new officers and try again. We can afford to make three or four trials better than we can afford to be controlled by the middleman. So I will say, long live the Association and down with the middleman.

Esparto. W. H. Biddall.

THE VETERINARIAN.

Answers by Dr. Creely.

A CONTAGIOUS SKIN DISEASE.

To the Editor:—We have a cow that keeps licking herself and rubbing against posts. In places she has the skin licked off in little spots. We thought it was caused by horn flies. What is it, and what can we do for it, and is it contagious? She appears to be well otherwise.—Sulphuret, Riverside.

It is a parasitic skin disease and is more than likely to attack other animals. Apply the following once daily: Creoline, 4 ozs.; olive oil, 8 ozs.; oil eucalyptus, ½ oz.

Dr. E. J. Creely.
510 Golden Gate Ave., S. F.

An Acknowledgement of a Gift from Porterville.

A carload of fruit shipped by fruit growers of Porterville district was recently distributed among San Francisco charitable institutions, including hospitals, orphan asylums, Salvation Army and benevolent societies—in all about forty societies were remembered. All these organizations were very glad to receive fruit in such quantities and apply for it in case of a repetition of the gift. The Associated Charities would also act as distributing agent again and consider it a move in the right direction. Fruit that would otherwise go to waste is given to people who could not otherwise have it, thus a benefit is conferred and the market not in any degree injured. The Porterville car was shipped April 30th and received May 3rd. The Southern Pacific gave the transportation.

Removal Notice.

We take pleasure in calling attention to the removal on May 1st of the Pasteur Vaccine Co. to the Pasteur Building, 158-160 E. Huron St., Chicago. The successful career of this concern during the last six years at its old location, 56 Fifth avenue, Chicago, is well known to every stock raiser in the United States and Canada who has had any experience with black leg, as the stock raisers are indebted to the Pasteur Vaccine Co. for Black Leg Vaccine. This removal became necessary on account of the growth and extension of business. The Pasteur Building is an elegant four-story building. The Pasteur Vaccine Co. now furnishes quite a number of reliable veterinary remedies, and has issued some instructive and interesting new literature in regard to the diseases of live stock and their treatment, which will be gladly mailed free on request.

Fertilizer Experiments.

We have received a copy of a little pamphlet, entitled "Experiments With Fertilizers," which has been prepared by the supervising committee of the experimental farm of the North Carolina State Horticultural Society for gratuitous distribution among farmers. The object of this publication is to instruct farmers how they can carry out practical field tests on a simple scale, to show which combinations of plant food are needed. At this experiment farm they have a very complete line of experimental work on fruits and vegetables inaugurated, and the little book indicated gives results of the work. It can be had free of charge by addressing the superintendent of the experimental farm, Southern Pines, N. C.

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During the past two years our vaccines have been used on several thousand head of cattle in the worst infested districts of California and with the best of results, giving entire satisfaction and proving an exceedingly profitable investment to the stock owner.

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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO., PIONEER PATENT SOLICITORS FOR PACIFIC COAST.

FOR WEEK ENDING APRIL 30, 1901.

673,106.—Arc Lamp — S. H. Anderson, Pasadena, Cal.
672,931. — Necktie Holder — H. W. Ayres, Los Angeles, Cal.
673,073. — Liquid Air Vessel — G. A. Bobrick, Los Angeles, Cal.
673,134.—Gate—O. K. Cleveland, America, Cal.
672,974.—Photo-plate Holder—H. A. Clifford, S. F.
673,016.—Mowing Machine—C. C. Coffinberry, Union, Or.
673,135.—Seed Drill — H. A. Denny, Reardan, Wash.
673,118.—Reflector — J. T. Edwards, Weaverville, Cal.
673,255.—Fish Dressing Machine—S. Haigh, S. F.
672,940.—Pipe Wrench — A. Heberer, Alameda, Cal.
673,263.—Timber Hook — Hitchings & Lachappelle, Hoquiam, Wash.
672,981. — Separator — R. W. Jessup, S. F.
672,982. — Separator — R. W. Jessup, S. F.
673,023.—Garment Supporter—J. Jorgenson, S. F.
673,058.—Concentrator — M. S. Leve, Fruitvale, Cal.
672,949.—Vehicle Axle—A. C. Massey, Los Angeles, Cal.
673,213.—Scale—J. A. Menard, Phœnix, A. T.
673,216. — Staple — W. H. Morehouse, Wasco, Or.
673,142. — Stamp Affixer — A. H. Schaar, S. F.
673,068.—Valve Piston—J. P. Simmons, S. F.
673,031.—Baby Carriage—A. H. Schleuter, Oakland, Cal.
673,180.—Vaporizer—H. G. Tassell, S. F.
673,304.—Cultivator — B. D. & F. M. Tharp, Athena, Or.
671,371.—Steeper—J. T. Thorp, Corvallis, Or.
673,330.—Ticket Case—J. E. Waldeck, Los Angeles, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s Scientific Press U. S. and Foreign Patent Agency, the following are worthy of special mention:

Fruit Grading Machine.—No. 672,453. Dated April 23, 1901. S. McGarvin, Fresno, Cal.

This invention is designed to grade fruit into different sizes, and consists of inclined screens disposed in parallel planes with an imperforate conveyor beneath and parallel of each screen, and in the plane with and a part of the succeeding screen. Means are provided for horizontally reciprocating the frame and projecting the fruit through the machine and contrary to the force of gravity. Means are provided at the end of each screen whereby the varying grades of fruit thus segregated are discharged.

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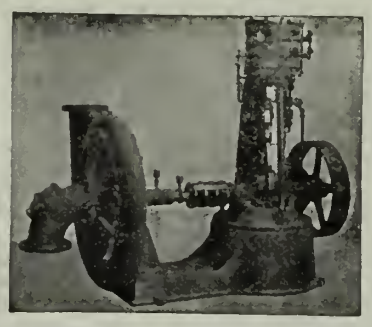
V. CASAZZA & BRO.,
190-192 Prince St., NEW YORK CITY.



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Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.
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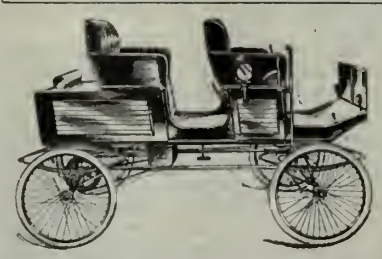

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The "Locomobile" Company
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Your choice in nine different styles. Ladies can operate them. Sold in guaranteed condition at reasonable prices. Illustrated catalogues and information will be sent on application.

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WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.

THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 21. SAN FRANCISCO, SATURDAY, MAY 25, 1901. THIRTIETH YEAR Office, 330 Market St.

Alaska Transportation in Winter.

Two illustrations on this page illustrate the novel transportation facilities of Alaska. The dog team shown sledding a boiler to a placer claim is too common a sight to be a novelty either at Atlin, where the view was taken, or in the Klondike. The sleigh ride behind the reindeer at Nome is new in Alaska. Except at Cape Nome and Port Clarence, the experiment of introducing reindeer has so far been a failure, and it is only this winter just past which has afforded much opportunity for their use at these places. There are recent reports, however, that at certain points reindeer are doing well and may ere long prove as serviceable as was anticipated at their introduction. One writer speaks of them as coming into a settlement and being driven away by the large dog population, while if they are met by men away from settlements they are quite tame and enjoy the petting which is offered them. The correspondent who sends us the photograph says that the reindeer team has just been hitched up to take several of the ladies of the "Four Hundred" at Jackson's Egloo for a sleigh ride on the tundra—great swampy plains lying near the level of the ocean, covered in summer with low vegetation, moss, grasses and Arctic bushes, but all frozen over in the winter, so that a good coursing surface is had.

As for the dogs which are the old transportation agencies in Alaska, it is an interesting fact that all kinds of dogs are now being used and some of them are proving better than the Alaska dogs. The latest drawback is, however, announced in the form of hydrophobia, which apparently attends the dog even in that far-away latitude. This is, however, of less moment now probably because of anti-rabies inoculation, which we believe is found effective.

Hauling a Boiler by Dog Team at Atlin, B. C.

THE Pan-American Exposition at Buffalo is formally opened as we go to press. President McKinley sent from San Francisco a congratulatory dispatch, which included the following lofty sentiment: "May there be no cloud upon this grand festival of peace and commerce; no thought of rivalry except that generous competition in useful arts and industries which benefits all. I earnestly hope that this great exhibition may prove a blessing to every country of this hemisphere, and that even the world at large may profit by the progress of which we give proof by the lesson of our efforts and their results. I trust that it may become evident before this exhibition closes that our vast and increasing prosperity is fruitful of nothing but good to our elders in the brotherhood of nations, and that our onward march may forever exemplify the divine sentiment of 'peace on earth and good will toward men.'"

THE wide reaching character of modern agricultural investigation, and especially perhaps the wide demand for results attained in California, is seen in a recent issue of the Ceylon Observer, which contains a letter from a Russian expert, resident in Paris, commending the alkali investigations of Prof. E. W. Hilgard of California. Thus the work goes around the world, being passed on from California to Europe and thence to India—the tidings of agricultural discovery being flashed from point to point. It reminds one of the old signal fires by which the ancients communicated news of their triumph from mountain top to mountain top — except that modern announcements go faster and reach farther.

CALIFORNIA'S experience with the bounty business for "varmints" seems to be reproduced elsewhere. It is telegraphed from Salt Lake that gophers at 5 cents a head have brought practical bankruptcy to the county of Tooele, Utah. They multiplied so rapidly as to become a veritable plague, and enterprising men and school boys as well have profited so much by killing them and receiving bounty for their tails that the county commissioners not only have abolished the practice of paying bounties, but also have been compelled to cancel bids for the erection of a new county jail because nearly all the treasury funds have been paid out for gopher tails. Men joined in the hunt. The little animals were slaughtered by the thousands, and one day the county paid out $800 in bounties. So great became the strain that notice has now been published abolishing the bounty, bringing an end to a very flourishing industry. The notice came too late to save the treasury; but in the meantime the county has been rid of a pest that was bringing ruin to every farmer. The difference, however, between California and Utah lies in the fact that we have not been rid of the pests, even though large sums of money have been paid. Perhaps Utah will also find ere long that there are plenty left for seed.

THE California Raisin Growers' Association in meeting at Fresno on Saturday last decided to reorganize upon an entirely new plan. The growers will lease their vineyards outright to the combine for a term of three years. The growers will attend to the raising of the crop and the association will market it. The consideration for the lease is to be $10, for which shares will be issued. A canvass will now be made for signatures to the new contract. If a large percentage of growers should remain on the outside the association will cut prices to force them in.

THE Floral Congress in session in this city last week was very rich in essays, some of which we hope to secure for publication. The attendance was good and drawn from the whole length of the coast.

A Reindeer Sleigh Ride at Nome, Alaska.

PACIFIC RURAL PRESS.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, May 25, 1901.

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The Week.

Very wide and sincere is the rejoicing that Mrs. McKinley is triumphing over the illness which gave such grave apprehension at the time of our last printing. For several days her life was in imminent danger, and sadness replaced the rejoicing which Californians had planned for the Presidential visit. Toward the close of last week, however, the tide turned, danger was passed and the popular spirit uprose with the welcome participation of Mr. McKinley in the launching of the Ohio, to attend upon which had largely depopulated the sovereign State whose name the great ship bears, and threatened to breed a temporary famine of good things in California. This week the President and several of his Cabinet are waiting in this city until the invalid attains strength for an eastward journey by the shortest route to her home.

A less happy outcome of the week is the strike of workmen in several allied trades and manufactures for a nine-hour instead of a ten-hour day. This whole matter of shortening the labor day is a marvel to the agriculturist, who finds that he has to improve even upon the sun as a measurer of the labor necessary to secure his livelihood, and his dearest hope in the matter is that the organizations now calling workmen from their tasks may not push their power to the extent of interfering with his procuring harvest supplies or the sale of his products. Sometimes the labor troubles of cities and transportation companies have wrought havoc with the farmers' industry and have caused his products to perish on the ground or in the markets. It is to be earnestly hoped that the present issue may be reached without sacrifice from the food producer.

Spot wheat has fallen 25 cents per ton and is quiet, though three ships have cleared this week for Europe. Futures are unsettled, but mostly downward in their course. Barley is weak and dragging at the last decline; arrivals are not large, but seem hard to place. Oats are still scarce and high, but not many are wanted; corn is out of sight; a sale at $1.50—almost an equivalent of wheat at twice its present value. Other cereals are unchanged. Dry beans are still steady for whites and Limas, with colored beans depressed. Hay has a fair market; new hay is easy and unchanged, though little is arriving. Bran is stiff and scarce—50 cents to $1 higher—which brings it almost up to middlings. Beef and mutton are unchanged—easy and quiet. Hogs are weak at the last decline; there is free offering of both Eastern and local hogs, though receipts of the former are likely to slacken if the Eastern improvement in values holds. Butter is holding its own, the surplus being steadily packed; Alaska orders are said to be considerable. Cheese is weak and lower. Eggs are dull; the pack or storage of eggs is held to be twice as great as usual, being increased by storage of Eastern eggs, which were worth less than they cost on arrival, and are held for the usual rise later in the season. Poultry is recovering a little. Old potatoes are too bad to sell as they might, while new potatoes are stiff. Flooding of a tule island threatens the immediate supply somewhat. New red onions are easier, though bought high in the interior—in fact, more than they now sell for here. A few fine oranges sell well, but common are low. Lemons are dragging, in competition with cheap limes. Cherries are selling high and there is not much complaint of rain. Canners are said to be paying up to $200 per ton for Royal Annes, and to $140 for choice blacks. Receipts of apricots are light so far, and early peaches are too green. Berries are selling well, with moderate supply of choice. Aside from prunes and raisins, the dried fruit market is cleaned up well. Prunes are slow and irregular, with sales a little above the old cut rates. Raisins are doing but little outside of advertising stock. Wool is moving steadily at unchanged prices.

Governor Gage has appointed Mr. W. H. Mills honorary commissioner to the Pan-American Exposition and the appointment will widely commend itself to Californians. It is a singular, but we hope not a very widely significant fact, that when there are places without pecuniary reward merit and fitness are quite apt to be recognized, and when there are ample funds in sight they are bestowed upon those who freely indulge in bickering, rioting and gluttony. Whether we shall ever outgrow this state of affairs none can tell but we hope we have had enough of it during recent years, for this generation at least. Mr. Mills will do well at Buffalo in pointing the lessons to be learned from the fine displays which will go forward from different parts of the State and the State will gain much both in population and in trade by the prominent notice which our resources and capabilities will attain. Telegraphic reports are that the exposition is opening this week in fine shape.

The latest report by the Government experts on beet sugar gives California a leading place. The expert, C. F. Sayler, says that there will be forty-two sugar factories in operation throughout the United States by the end of next autumn. Everything indicates that the industry is thoroughly established throughout the country. California is the leading State in production, with eighteen factories, including the largest in the world. The immense amount of pulp and refuse left after the extraction of the sugar appeals especially to farmers and industries that grow out of farm products. Mr. Sayler says no other feed for stock is so valuable and so cheap as beet pulp. The beet sugar factories turn out from 45% to 50% of the original weight of the beets worked in the form of refuse or by-product. Sugar beets seem to respond especially to cultivation in the arid region, where they have given better results than any other crop. The arid section has been enabled to cope with other sections of the country where the crops have been produced by natural rainfall, not in the amount of tonnage per acre, but in the higher sugar contents and the purity of the beet. Still, sugar beet growing does not please all California farmers and the sugar factories are all securing lands of their own upon which they can locate tenant growers who can figure a profit out of the prices which the manufacturers are willing to pay for the beets.

What a community of wideawake people can do for their own entertainment and profit can be seen in a circular which we received announcing a flower, natural history and art exhibition which will be held in the old Chautauqua building, Pacific Grove, on June 13 to 15, under the management of the Pacific Grove Museum Association, of which Mr. T. W. Cowan, the well-known English botanist and apiarian, is president. Many prizes have been donated. We doubt not all will be surprised and delighted with the profusion of excellent things which flourish by the seaside at Monterey.

QUERIES AND REPLIES.

Leaf Drop, Leaf Spot, Apple Pruning.

To THE EDITOR:—Find enclosed two bunches of leaves—one is from an apricot. Would like to know why they are dying. The other leaves are from Yellow Newtown and White Winter Pearmain apple trees. Is it San Jose scale? If so, is it proper to spray all trees in orchard next winter with kerosene and lye, as I have pears, plums, prunes, apricots and cherries in the same orchard?

I would like to know the general process of pruning the winter apple trees in the Watsonville country.—SUBSCRIBER, Lompoc.

The dying of the apricot trees is not due to any parasitic disease, so far as the specimens show. The leaf stem seems to fail first and to shrivel, thus causing the death of the leaf. The cause of the trouble lies back of the specimens sent, and may be due to several causes, but which of them we cannot guess. In such cases samples of twigs or branches should be sent—not leaves alone.

The apple leaves are being injured by one of the leaf-spot fungi—so called because they make roundish spots on the leaves in which the tissue turns brown, shrinks and parts around the edges and frequently drops out, leaving a roundish hole. When these are abundant, as in some of your specimens, the circles join and the injury becomes irregular in shape. This is not the San Jose scale, which is a roundish disk, about the size of a pin's head, upon the bark of the twigs and branches. It is not found on the leaves usually, though it does take freely to the fruit. Here, too, for full examination, you should have sent some twigs with the leaves. The pure kerosene, followed by lye, which has good standing in your locality as a San Jose scale killer, would have no effect upon the trouble which these leaves show. The treatment would be lime, salt and sulphur in the winter, followed by Bordeaux mixture after the leaves come out, or else winter Bordeaux followed by a weaker Bordeaux after the tree is in leaf. Apple trees in the Watsonville district are usually cut back at planting to about 2 feet and shaped with three or four branches well placed on the stem, other shoots being removed. The next winter these branches are cut back to about a foot, which induces branching low. The next winter the two best shoots from each branch are selected and shortened about half their growth, and others removed, except the short spurs, which should usually be retained. This should give a low, well-branched tree, and subsequent pruning consists in removing surplus shoots, to keep the tree from blooming too thick, and what after-cutting is necessary to keep the tree in good shape. This is the general proposition. Of course, different apples have to be treated somewhat according to their manner of growth. This is the ruling practice with apples everywhere in the State and in Watsonville as elsewhere; one other thing is also true—you will find as many kinds of pruning and non-pruning cranks around Watsonville as you will in any other of our leading fruit districts.

Disfigured Plums.

To THE EDITOR:—I send samples of Clyman, Tragedy, Burbank and Satsuma plums. You will observe that all are marked with a scar which disfigures them for shipment in a fresh state. Packed separately I send a few samples of Simoni which appear to have been eaten in an early stage by some variety of caterpillar, I presume. For several years past I have been troubled to a considerable extent with these defects, but the latter marks, which are the result of insect eating, seem to be confined almost exclusively to the Simoni variety.—GROWER, Yolo county.

Your conjecture as to the cause of the injury to the Simoni seems to be undoubtedly correct. The injury in most of the specimens at least has been done by a caterpillar of some sort. It looks like the work of the canker worm, but it might have been done by some other caterpillar. With reference to the injury to the other plums, it, in a few cases, also seems to be the result of insect work done when the fruit was very much smaller than it is at the present time. Other marks seem to be due to abrasion such as the fruit might receive from the shifting of the branches in the wind, etc. There is always more or less of this injury apparent, especially on plums which have such a tender skin as the Japanese class does. There is no disease apparent, nor could the injury have been averted by spraying before the blooming time. If

the eating of the young fruits should be so extensive as to reduce the crop, perhaps a very early spraying with Paris green—one pound to three hundred gallons of water—might be necessary. As for the mechanical injuries by rubbing, etc., that will be practically unavoidable and the effect of the injury can be reduced measurably by removing such fruit during the thinning process, which will make the remaining fruits of better size and possibly more profitable. There is in some parts of the State injury to young plums by hail storms, but in that case there is a different appearance from that which your fruit manifests.

Strawberry Growing.

To the Editor:—Which way is the best to grow strawberries to receive the best return? 1. To have the plants thick in the rows, or have them 6 to 12 inches apart? 2. How much nitrate of soda is it best to put on an acre of strawberries? 3. In putting nitrate of soda on strawberries, will it hurt them if it falls on top of them? 4. Will too much nitrate of soda kill young trees? Is one pound to the tree too much? My neighbor put that amount on some plum trees just set out and it killed them, or, rather, they died.—Reader, Auburn.

Strawberries in California are almost exclusively grown in matted rows, covering the whole space excepting that occupied by the irrigation furrow. Perhaps larger fruit could be grown by confining the plants to single spaces by pinching off runners, etc.; but practically none are grown that way, perhaps because of the greater amount of labor involved. From 150 to 300 pounds of nitrate of soda may be used on an acre of strawberries. It will not injure the plants to have the nitrate fall upon the leaves; but it would be desirable to make application before a rain, so that it may be carried into the ground as soon as possible. The nitrate should be scattered very thinly and evenly, because too much of it is very destructive to any plant. Probably one pound to the tree in planting a young orchard would not be too much, if it were thoroughly mixed with the soil and scattered upon the surface a little distance around the tree, and not applied immediately in contact with the roots. The neighbor of whom you speak used, if we remember correctly, three or four pounds to the tree, and probably applied it directly in the hole in which the tree was set. Under such conditions the nitrate is very destructive.

Vegetable Hair.

To the Editor:—G. A. Dennison's inquiry from Fresno may possibly refer to long moss (Forida moss, New Orleans moss); this has been called vegetable hair. The long threads, when freed from their gray covering and ready for market, resemble curled hair, and is used as a substitute for hair in upholstering, etc. This long moss grows upon large oaks in the low lands of the South Atlantic States, hanging in long, graceful festoons from the trees.—J. O. C., San Jose.

To the Editor:—Referring to your issue No. 20, Vol. LXI, is it not probable that the plant referred to by your correspondent is long moss (Tillandsia useneoides), also called long beard, Spanish moss, black moss, and, improperly, perhaps, Barba Hispanica. This epiphytic plant flourishes in the swamps of our Southern States, where it grows upon forest trees, its strands hanging pendant from the limbs thereof and frequently reaching a length of 15 feet. When properly treated, it is an article of commerce. It is chiefly used as a cheap substitute for animal (curled) hair in upholstery. When decorticated, the remaining spine resembles black horsehair. Decoritication is effected by submersion in water, which rots the cortex.—Chas. Christensen, San Francisco.

Many thanks for these responses. The information is timely and interesting. It seems that the French querest is still away from the mark, however, in calling for "some elastic grass" as a source of such fiber.

The Pecan in California.

To the Editor:—Will you have the kindness to send me such printed matter as you may have relating to the growing of pecans in the State of California? I am contemplating putting out a seventy-five acre grove.—Reader, Chicago.

We know of nothing in print about the pecan in California except occasional paragraphs in the Pacific Rural Press and a brief summary in the last edition of our "California Fruits." The pecan has had a checkered course in California, and has, on the whole, accomplished but little. Though trees were planted thirty or more years ago, and nuts have been produced here and there, no commercial product of any consequence has yet been reached. Though probably the best of the hickory family for California, it has not done much for itself here. In some places near the coast, notably around the bay of San Francisco, the tree does not bear or else bears sparingly, and holds its nuts so that they are sometimes sprouted on the trees by the moisture of the rainy season. This seems to be its behavior where autumn frosts are light or absent. In the interior valleys the tree behaves more normally, and some quantities of nuts have been gathered; but even in such situations the outcome has not accomplished any popularity for the tree. From time to time propositions have been made to plant large acreages such as our correspondent now makes, but we have not heard of results from any such enterprise. If any reader knows of results we shall be thankful for the information. With our present knowledge, we are forced to consider the pecan as lacking demonstration of success in California, and consequently justifying no investment except upon an experimental basis.

Tobacco and Liquid Manuring.

To the Editor:—Which is the best kind of tobacco to grow for smoking? How will it do to grow the plants with liquid manure, and how is it made and applied?—Reader, Oakland.

It is difficult to say which tobacco is best for smoking, because the varieties differ in nicotine content greatly according to the soil and situation in which they are grown. In Berkeley, for example, we find that the Sumatra and some of the lightest Havana cigar tobaccos are quite strong enough for pipe-smoking, while some of the Burley's or heavy tobaccos of Kentucky and other States are rank enough to kill at a long distance. Our experience is that if you wish to grow your own tobacco in this part of the State select the lightest cigar tobaccos you can find. The best way of making liquid manure is to take a large cask or other receptacle of water and add manure, stirring it until the extract becomes about the color of weak tea. The method of application depends upon the scale upon which you intend to operate. It does very well for a few plants to use a sprinkling pot, applying to the ground rather than to the foliage, however, and for larger uses they have small casks mounted on wheels, like miniature street sprinklers. You will find, probably, that so far as tobacco goes that most of our soils are strong enough to give very strong growth without recourse to this system of fertilization. In preparation of the ground it would be better to spread the manure on the top at the beginning of the rainy season, and then before spading rake off all the coarse material. Tobacco does not usually reach high excellence when direct animal fertilization is used.

Apple Pruning and Pinching.

To the Editor:—I have some two and three-year-old apple trees which I did not cut back this spring. Could I cut them back now, or later, without injury to the trees? Sour sap troubles us a good deal here and I have been told that heavy cutting in the spring has a tendency to make this disease worse, but if I do not cut them back the winter storms are apt to blow some of them over. Is it advisable to pinch back apple and prune trees that are making a very vigorous growth, and when is the best time to do it?—Grower, Forestville.

The only way to get a low-branching tree is to pinch during the growing season, whenever a shoot has reached the point at which branching is desired, or to allow full summer growth to be made and cut back during the following winter. The latter is the cheaper and on some accounts the better way to proceed, because it encourages stronger wood growth, which is usually desirable in a young tree, while pinching is a repressing process to a certain extent. Pinching also encourages the starting of many slim laterals, which is sometimes desirable, sometimes not. We have no belief in the theory of sour sap by cutting back. We would cut back young trees now rather than let them go—cutting back, however, to a side shoot wherever possible. This is best now even if further shortening may be necessary next winter. Do not overdo it with a young tree now.

Rostrata and Viminalis.

To the Editor:—In the Pacific Rural Press of Jan. 12, 1901, the statement is made that "Eucalyptus rostrata, the red gum, has been very generally confused in this State with E. viminalis, a much inferior tree." Then in the Pacific Rural Press of May 11th we read: "The Third State Forestry Report states that Eucalyptus viminalis was the most successful species tested." There may be no essential conflict between the two statements; but to the uninformed, like myself, an explanation is needed.—H., Vacaville.

Both are good trees. We have not the data for close comparison of them as to their California adaptations. It is probably impossible to determine which is absolutely the better; it may depend upon conditions. We shall be glad to print all our readers can furnish us of their experiences and observations of the two trees.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 20, 1901.

Alexander McAdie, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cool weather during the week has been favorable for all crops. Light showers have fallen in portions of the valley, but the rain has not interfered with hay making, which is now progressing rapidly. Grain has made a remarkable improvement since the recent rains, and in some places the yield will be nearly double the amount anticipated three weeks ago. A large crop of wheat and barley will be harvested in all the grain districts, and present indications are that the quality will be excellent. Hay is yielding a heavy crop. Hops are making a vigorous growth. Summer-fallow plowing is in progress. Olive trees are heavily laden with blossoms, and orange trees look well. Cherry picking is progressing, and large shipments are being made. Other fruits are in good condition.

COAST AND BAY SECTIONS.

The weather during the week has been favorable for the growth of grain, hay and fruit. Fogs along the coast have greatly benefited grain and pasturage. The recent heavy rains materially improved the condition of wheat and barley, and in most sections prospects are good for large crops. Late sown grain is heading out. Hay is yielding a heavy crop, excellent in quality. Pasturage continues plentiful in most places. Corn, potatoes and hops are thrifty. In portions of Sonoma county there will be a light yield of peaches, prunes and cherries. The cherry crop is also reported light in Alameda county. Other deciduous fruits continue in good condition.

SAN JOAQUIN VALLEY.

The weather during the past week has been clear, with warm days and cool nights, and very favorable for all growing crops. Wheat and barley are progressing nicely, and, while the grain crop will be light in some sections, it will be very good in others, and as a whole the crop for the entire valley will be equally as large and as good as last year's. Some early wheat is being harvested, but the general harvest will not begin for a week yet. Grain prospects have greatly improved during the week. Haying continues, and a large crop of good quality will be harvested. The second crop of alfalfa looks promising. Deciduous fruit and grape crops are making fine progress. The peach, prune and apricot crops will be light in most localities. Much irrigating has been done, and water for this purpose continues abundant. Stock of all kinds are in good condition, and green feed continues plentiful.

SOUTHERN CALIFORNIA.

Foggy nights, with considerable cloudiness during the day, have been favorable for crops of all kinds, though somewhat retarding hay making. Light sprinkles of rain have occurred in some sections. The prospect for a fair yield of grain is much better since the recent rains, and in some places it is reported there will be a large crop of wheat and barley. There are some reports of rust on oats, but no material damage is anticipated. A good crop of hay is being harvested. Sugar beets are doing well. Peaches will probably yield a fair crop, but prunes will be light. Citrus fruits and walnuts are in good condition.

Eureka Summary.—Crops were much improved by rains. Prospects are good for heavy yield of apples and cherries in localities escaping severe frost. Fruit outlook very promising. Humboldt strawberries are on market.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 22, 1901, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka	1.02	46.94	48.59	42.72	62	44
Red Bluff	.28	24.51	22 94	25 78	82	42
Sacramento	.26	19 77	20.24	19.89	76	44
San Francisco	.46	20.94	18.42	22.13	60	46
Fresno	T	11.03	10.27	8.64	88	46
Independence	.00	5.61	3.65	4 54	88	38
San Luis Obispo	.13	31.07	17.20	16 67	72	42
Los Angeles	T	15 60	7.91	17.05	72	46
San Diego	.03	11.28	5.89	9.33	68	52
Yuma	.00	3.60	1.29	2.88	100	54

HORTICULTURE.

Root Rot Diseases of Fruit Trees.

TO THE EDITOR:—The fungous rotting of the roots of fruit trees has troublod orchardists for many years, but during the last two or three years the disease seems to have been spreading with unaccustomed virulence in several parts of the State. This is evidenced by the number of inquiries on this subject received at the Agricultural Experiment Station. The diseaso is one of the least understood and the most difficult to combat of any of the diseases which attack our trees. For this reason the enclosed article, dealing especially with the cause of rotting of the roots of peaches and Sugar prunes in Santa Clara county, and also with the general state of our knowledge of these diseases, would, I think, be interesting to your readers. It has been kindly communicated by Mr. Herman von Schrenk, special agent of the Division of Vegetable Physiology and Pathology, United States Department of Agriculture, who is engaged in the special study of these diseases. F. T. BIOLETTI.

University of California, Berkeley.

ROOT ROT OF PEACHES, SUGAR PRUNES AND APRICOTS.

A number of diseased roots of peaches and Sugar prunes were sent me recently by Mr. Shelley of Cupertino, in whose orchard many trees are dying from disease. The disease is evidently due to a fungus, which attacks the younger roots, growing through the bark into the inner bark and the cambium layer. The white threads of the fungus are plainly visible under the bark of newly infected roots, forming broad sheets. As the disease progresses the newer wood becomes affected, and pockets full of the familiar gum appear here and there. At first these pockets are very small, but they rapidly increase in size and fuse, forming large cavities, separated only by thin ribbons consisting of the pith rays. The gum exudes from the bark, where it can be detected readily in roots still alive. With continued growth of the fungus the whole cambium layer and the inner bark are killed near the point of infection, and from there on toward the base of the tree. In trees which are in a dying condition the bark of the roots drops off readily when cut lengthwise at any point. There were no signs of fruiting bodies in the roots sent, so that the nature of the fungus could not be determined with accuracy. It is probably one of the higher fungi, judging from the structure of the mycelium.

Its method of spreading through the ground was, however, plainly indicated by the diagrams which Mr. Shelley prepared at my request. Two of these are reproduced herewith:

Diagram of orchard. Altornate rows apricot and peach. + dead trees; ÷ sickly tree; * healthy trees.

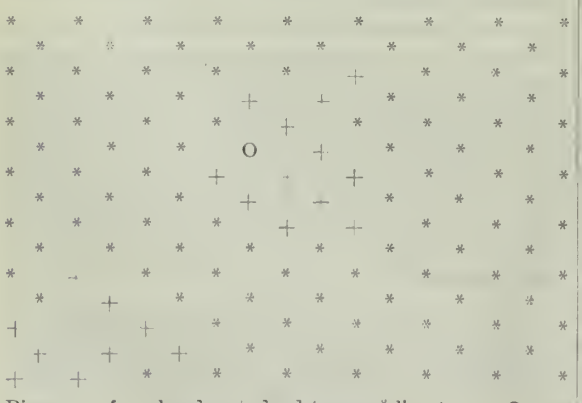

Diagram of orchard. + dead trees; * livo trees; O tree which may be resistant.

It appears that wherever the fungus occurs it attacks trees in groups, so that one is led to conclude that the trees at the edge of infected areas, as indicated by the dead trees, will most likely be attacked next. In fact, a number of trees are marked sickly on the diagram (which see). The bark of the roots of these trees showed the presence of fungus threads. It is a well-known fact that fungi which grow in the soil gradually spread out from a center, sometimes with great regularity, the degree of regularity depending on the moisture and the food supply. It is very perfectly illustrated by the fairy-ring mushroom, commonly found on lawns and meadows. There are a number of soil fungi which attack fruit trees, to all of which the term root rot fungus has been applied. The honey mushroom (Agaricus melleus) is one which has been known for a long time, both in Europe and in this country. Its yellow fruiting caps form at the base of diseased trees, in the late summer and fall, for several years after the death of the trees. It is readily distinguished from the other root rot fungi by the presence of black strands between the bark and the wood. Peniophora parasitica is a fungus which annually destroys a great many fruit trees in the Central States. It forms reddish, leathery sheets on the roots, but there are no strands such as are found in the honey mushroom.

Very little is known of the rate of growth of any of the root rot fungi, but from studies made in apple orchards in the Central West it appears that growth is very slow. The origin of root rot fungi has puzzled orchardists for many years, and there has been much discussion on this point. It has been found that as a rule these fungi live on the roots of native trees and shrubs, killing them much as they do fruit trees. The various species of oak are particularly susceptible to these diseases in the United States, and it is from the roots of diseased oak trees that many of the root rot fungi get onto fruit trees, when these are planted on diseased land.

The soil fungi so far investigated are parasitic—that is, they cannot live for any length of time apart from a host plant. The fungus referred to above, which destroys so many apple orchards from West Virginia to Oklahoma, grows readily on living trees, but when placed in soil free from living roots it forms fruiting organs and after a brief period it dies out. Fruit growers frequently find fruit trees dying on land which has been cleared for many years. This would seem to prove that the fungus does live in the soil, but one must remember that roots of many forest trees, particularly the oaks, store up large quantities of food materials, which is evidenced by the tendency to form sprouts for many years after the trees are cut down. It is thus possible for live oak roots to harbor a root fungus for a considerable number of years.

The methods for combating fungi of this kind are as yet not very satisfactory. It is, as a rule, not advisable to treat the soil with fungicides, because one is never sure that any particular tree will be affected, and when a tree shows signs of disease it is too late to begin treatment. The most effective method so far tried is to dig a deep trench around the affected area, and it may be well to go quite outside of it, even if one or more healthy trees are sacrificed. This trench may be filled with some inert substance, like ashes or cinders, which should be kept exposed so as to remain dry. Such trenches will stop the further spread of the fungus beyond the infected area. Replanting trees in holes where others of the same kind have died will be found perfectly useless, without a thorough disinfection of the soil. Where there is brush wood at hand this can be accomplished by burning the brush in trenches not more than 2 feet apart. The soil is thus subjected to a baking process. Pieces of infected roots should be carefully collected and burned.

In some cases where apple trees are killed by a root fungus peach trees are not attacked. In such cases it is for the present very much better to give up growing apple trees on such land, and to plant peach trees, than to waste time endeavoring to kill out the fungus. What is true of apple and peach trees may be true for peach trees and some other tree in the root rot disease of California. It is suggested, therefore, that growers experiment with other trees, planting them in holes where peaches or Sugar prunes had died out. Or, again, they might plant some herbaceous crop for several years, for, as far as we know, these root fungi attack only woody plants. After several years fruit trees might again be set out. In one district in southern Missouri, where the root rot had been very destructive, strawberries have been grown with great success (it is now three years since the orchard was destroyed). There is no sign of the fungus in the strawberry field, while in the adjoining oak forest the trees are dying in large numbers.

One of the most promising methods for combating fungus diseases, which is as yet but in its infancy, lies in the selection of more or less resistant varieties, upon which less resistant varieties can be grafted or budded, or with which they can be crossed. This method for the prevention of disease is particularly applicable to diseases of the soil. The value of the Northern Spy and the Winter Majetin apples in getting rid of the troublesome root aphis has been appreciated by the Australian fruit growers for many years and is now making itself felt in California and in other parts of the United States. It may prove that these varieties are also resistant to the root fungi. We have at present no reason for assuming that they will prove to be so, but, if they are not, some other variety may be. It will be very desirable for all growers who use the Northern Spy root to watch their behavior toward the root rot.

There is another form of resistance or immunity to which attention must be called. One will find that in areas where a particular disease is destructive to some one kind of plant one or more individuals will be almost or entirely free from the disease. Whether this be due to the absence of infection, to greater vigor, or to some inherent quality of that plant, does much matter now, but the fact that it is free from that particular disease indicates that it is different from its neighbors with respect to the disease. This suggests making use of that particular plant for making new plants. In areas affected with the root rot diseases one will find almost always one or more healthy trees surrounded by dead or dying ones. In seeking for a race of trees which shall be resistant to the apple root rot and the crown gall we are now using the roots of such healthy trees for propagating. These trees, after growing a year, will be planted in infected soil. It is, therefore, suggested that fruit growers whose orchards are affected with a root rot disease secure roots from healthy trees within affected areas, and send them to us in the fall for testing, together a diagram such as the above, showing location of diseased and healthy trees. Before sending roots growers will please ask for shipping directions. HERMAN VON SCHRENK.

Shaw School of Botany, St. Louis.

The Bee and Blight Issue in Kings County.

Following the account of this matter, given in our issue of April 6, there comes in the Hanford Journal an interesting account of the joining of the issue in that place on Monday of last week, when about thirty fruit growers and bee men appeared before the Board of Supervisors to discuss the pear blight in connection with the bees.

The Board of Horticulture report was submitted to the Board of Supervisors and read as an introductory. N. W. Motheral talked quite extensively and had several branches of pear trees which were affected by the blight and which he maintained was caused principally by the bees distributing the diseased pollen to healthy blossoms. Mr. Motheral stated that the blight was almost always commenced on the blossoms or tender twigs and from that was carried into the sap of the tree, where it, in many instances, has caused the tree to die. Mr. Motheral produced a letter which he had received from Prof. Pierce in regard to the matter of bees as a pest to the fruit growers, in which was a statement made by Prof. Waite who is good authority. Mr. Waite says that bees are the distributors of the larger part of the pear blight. Mr. Motheral in closing remarked that as the fruit growers were the greater tax-payers, he hoped the Supervisors would take steps to protect the fruit industry.

Cadmus Clow, who is quite an extensive producer of pears, was called on for a few remarks. Mr. Clow said that he had had some experience with pear blight in the B. V. Sharp orchard and also in his own orchard north of this city. He stated that when he discovered the blight in the orchard he employed a force of men to go through the orchard and cut out as much of the diseased trees as possible, but this did not seem to help matters any as, in his opinion, the bees kept spreading the blight. He also said that eight acres of his trees had been killed by the blight and he had been compelled to take them up.

A. V. Taylor said that he did not notice the blight in his orchard till about one year ago. He did not try to cut it out, as Mr. Clow did, as it did not seem to prove successful, and if it was going to kill the trees anyway he did not care to go to the expense of cutting the blight out. He expressed his opinion as being that the bees were the cause of the greater part of the mischief done by the blight.

Mr. Taylor has had Robert Fincher doctoring his trees and stated that Mr. Fincher thinks he can cure them, but as it costs 50 cents per tree to inoculate each year he did not consider it a paying proposition and would ask that the bees be removed.

A. F. Jewett made a few remarks, which were in substance the same as those made by the gentlemen above mentioned. He too, was of the opinion that the bees were a nuisance to the fruit growers.

After the fruit men had been heard on the subject, several of the bee men of the county addressed the Board, stating that if it were proven scientifically that the bees were a detriment to the fruit interests of the county that most of the bees would be removed to localities where they would do no harm, but if sufficient proof was not forthcoming as to the damage done by the bees, the matter would be fought to the end by those interested in the bee business in the vicinity.

THE BEE SIDE OF THE QUESTION.

Charles Doherty of Lemoore, a bee and fruit man, made a very strong talk. He claimed that there is a pear blight in the orchard of Mr. Motheral and asked why the horticultural commissioner did not try to get rid of it, or ascertain the cause of the blight in his orchard. "He is playing," said Mr. Doherty, "for time, hoping that by some means he may be able to discover the real cause, while attempting to make others believe that the bees have spread the blight. I am as anxious as any one to destroy the blight, which has started in our orchards, and, furthermore, I am willing to burn up every bee on my place, providing these men who are making the charges against the bees are willing to put up a cash bond as a responsibility that they are correct in their charges. If they believe, as they tell you they do, they will not hesitate to do this, as a surety to the bee men. When they pitch onto me, as a bee man, with a charge of this kind, they not only deal with me but with the entire Bee Keepers' Association, which Association stands ready to do all in its power to right matters with all grieved parties; but, unless this is placed in their hands for consideration, I am not going to be bulldozed into removing my bees by such arguments

as we have heard to-day, unless forced to by law."

It was further claimed by the bee men that the bees were a necessity to our vineyards, as they tended to destroy and carry off all refuse and broken grapes from the trays, as well as rotting fruit from the trees. Fred Brown made a strong point when he spoke of the blight coming out on the limbs and body of the tree first, as claimed by some of the fruit men, and stated that the bees never light upon any part of the trees but the flowers. He also stated that at a meeting previously held Mr. Motheral had claimed that the blight flew in the air and was gathered up by the flying bees. "To-day," said Mr. Brown, "he has changed his tactics and claims that the blight is a sticky substance and never flies in the air." He further stated that most of the pear orchards were located in strong alkali land, and that in many places the blight had been destroyed by drainage.

Mr. Flory was also of the opinion that the matter would be investigated if brought before the Bee Keepers' Association, and he thought all of the bee men would abide by any decision made by the Association.

Both sides declined the invitation to continue the argument and the meeting adjourned. The Board of Supervisors will take such action in the matter as it deems the most plausible.

What Prof. Pierce Says About Bees and Pear Blight.

The following letter, which was a part of the report of the Horticultural Commission made to the Board of Supervisors of Kings county, will be of interest:

I herewith give the main facts upon which are based the claim that bees take an active part in spreading the disease of trees variously known as pear blight, twig blight, fire blight, etc.

1. Pear blight is a bacterial disease which affects pear, apple, crabapple, quince and related trees. It is induced through the action of a specific micro-organism belonging to the bacteria and known as Bacillus amylovorus, (Burrill) De Toni.

These facts have been demonstrated by many scientific workers by careful inoculation experiments conducted with pure cultures of the bacillus. The cause of the disease has therefore been well known for many years.

2. The identity of the blight of pear trees in the Clow and Taylor orchards near Hanford—these particular orchards are only cited for the sake of accuracy, as there are many others affected—with true Eastern pear blight, has been demonstrated at this laboratory. Bacillus amylovorus was isolated in pure culture by the plate process from blighted branches from Mr. Clow's trees, and a young and thrifty pear tree was inoculated and died to within a few inches of the ground of true pear blight. A control tree treated the same way as the inoculated tree, except that the bacillus was not introduced, remained perfectly healthy.

M. B. Waite, assistant chief of this division of the department, has kindly supplied the following additional facts bearing on this matter:

3. The occurrence of the blight on the blossoms in great quantities and the great rapidity with which the disease spreads from flower to flower indicates a normal and very effective method of distribution.

4. The germs were found growing freely in the nectar of the blossoms.

5. Bees were seen repeatedly visiting the infected flowers, and some were caught taking infected nectar, and by means of plate cultures the pear blight germs were isolated from their mouth parts.

6. By covering parts of the trees with sacks of various kinds of material and then artificially infecting certain flowers on the tree, the blight was observed to spread very freely over the uninfected and uncovered blossoms, but was entirely absent in the blossoms covered by mosquito netting.

7. Blossoms were infected and at once covered with sacks, and the blight in such cases was retained in the infected blossoms.

8. Pear blight germs died very soon after being dried up, and lived for only a brief period on exposure to weather conditions out of doors; hence they can not live in dust and be blown around to any great extent by the wind.

9. Pear blight virus, particularly that which occurs on blossoms, is a very sticky substance, and is readily carried by insects, birds or other animals, but cannot be blown by the wind.

This brief presentation will, I believe, furnish your Board with the main facts needed to show the connection existing between the visits of bees to pear flowers and the spread of pear blight.

NEWTON B. PIERCE, Pathologist in Charge.

Santa Ana, April 23.

Walnut Trees in Sacramento Valley.

TO THE EDITOR:—In your issue of March 31st a Mr. Coffin asks about walnut trees at an elevation of 4000 feet. I can give him information about an English walnut tree 500 feet above sea level. In seven years it has been four times frost bitten and the other three times I have had various crops, one good one and two scant. Still, it grows and gives good shade. I am told it is about thirty-five years of age and it is 6 feet 1 inch in circumference 6 feet from the ground; 1 foot from same it is 7 feet 2 and is in good condition and full of fruit as I write. I think that the American walnut ought to suit, as it is not in bud at the end of March and it always bears with me.

The people who built this place had good ideas. They surrounded the house with trees—one American walnut, one English walnut, two blue gums, a mulberry and other trees. In summer we are always in shade. Last year English friends were going home via the Canadian Pacific and they went into raptures at these trees laden with fruit and their size.

Redding. W. J. B. MARTIN.

The Pistachio in California.

TO THE EDITOR:—A useful and honored missionary in Turkey, who is planning to spend his old age in California, asks me the following questions about pistachio trees, which I have no possible means of answering, except some of your public-spirited readers send me information for him. These are the questions [and we interject the answers to each.—ED.]: E. S. WILLIAMS.

Saratoga.

1. Have the trees in California been raised from the nuts or transplanted? The first trees were seedlings, afterwards transplanted trees; recently scions have been sent to the State by the Department of Agriculture, and some have succeeded in grafting them into the old trees. Still later rooted plants have been sent in by the department.

2. In what latitude are they and at what height above the sea? The trees known to us are not over 200 feet above sea level.

3. In what kind of soil are they and are they irrigated? Clay loam, and occasionally irrigated.

4. Are they healthy and growing well? They grow well, but we have seen no fruit.

5. How long since planted and how large are the trees now? Wild pistachio trees are twenty years old and as many feet high.

6. What amount of fruit have they borne and do they bear every year? No amount of fruit has yet been produced.

7. Have they suffered from frost, heat or insects? Not as yet reported. The tree seems quite hardy.

8. Has any special care been taken in regard to fertilizing the flower? No.

9. Has the soil about them been cultivated and enriched? They have been treated as other fruit trees—and that means well treated—in California.

ARBORICULTURE.

Windbreaks and Frosts.

From an essay by JOHN HOFFMAN at the Cucamonga Picnic-Institute.

I had been induced to give a few remarks upon the all-important subject of frost in relation to windbreaks, and I started on the trail for information. A friend told me with great emphasis that the windbreaks surrounding his place had certainly been the cause of much damage from frost to the fruit. Mr. B. was equally positive that but for the windbreaks his fruit would have been a total loss. A third friend had changed his mind since the freeze of 1899 and intended setting out trees for protection. Mr. D. had also changed his plans, but intended taking up those he already had, and a friend from Redlands was much surprised when he learned there had been any cold weather.

By this time my ideas on the subject had become a little mixed and I felt less sure of presenting unassailable facts. However, my observations, as they have been, will here be given, trusting in your mercy to overlook faults, which are many. The lemon tree has been considered, as it is a more delicate instrument for recording temperatures than the orange.

WHY THE NORTH END TREES ARE STRONGER.—In the first place, then, there are, I believe, few within the sound of my voice who will disagree with me when I say that the temperature on the south side of a hedge is higher during a cold night than on the north side. Here in Cucamonga we, as a rule, irrigate from north to south. Consequently, the trees at the upper or north end of the rows receive more water than do those lower down. This will occur no matter what system of surface irrigation is practiced, for not only do the streams run the full length of time, but in the furrow system they are three to six times as wide as at the bottom; and running without intermission, the soil of course absorbs more water than where the streams occasionally cease and allow what may be called cement to form. This will no doubt account, in a large measure, for the stronger, healthier condition of the trees at the north end of the place and will also go far towards proving the theory that the condition of the tree, and not its relation to the windbreak, is the cause of its comparative freedom from damage.

ON THE SOUTH END.—But to prove that it is certainly colder on the north than on the south side of a hedge let us remember that water will congeal much more readily on the north than on the south side. The ground, too, becomes crusted more firmly on the north, being always loose immediately south of the trees, the crust forming and increasing in exact proportion to the distance from the hedges. My trees are set 15x30, rows running north and south. The trees almost meet overhead the short way. The ground between these trees has been frozen but once since they attained large size, while the soil in the wide spaces away from the windbreaks freezes frequently. Trees on the north side of a windbreak, but some distance away, suffer more than do those higher up; but this may not be caused by the windbreak on the south, although I believe it is to a certain extent.

AN ILLUSTRATION.—There is a large lemon orchard here which is divided into three lots. We will call them Nos. 1, 2 and 3. Nos. 1 and 2 are irrigated from north to south and the least damage was done on the upper or north end of the rows, of course south of the windbreaks. Lot No. 3 is watered from west to east, and here we notice the trees are freer from injury south of the hedge and also near the head ditch, showing very clearly that the condition of the tree, as well as its position in relation to windbreaks, is largely responsible for its escape and a point well to be considered. It also shows that the windbreaks on the south of one's place are not the sole cause of damage to trees in say the lower half of the orchard, contrary to the generally accepted theory.

AWAY FROM TREES.—Now, as to places entirely unprotected. This must, it seems, be handled theoretically. I believe it to be much colder on an open field during a cold night than south of a row of trees or windbreak of any sort, whether it be a line of trees, a barn or a clump of bear-plum bushes. You will notice this plainly the morning after a freeze. The ground in the open is frozen while that south of the hedge is not. I noticed this particularly when plowing for grain the morning after the freeze of January 7, 1894. There are two well-known orchards in Ontario totally unprotected. Two years ago these places escaped with very little damage. The owners felt certain it was due to the absence of windbreaks. This year they suffered severely. The owners feel less certain of their theory.

MANY THINGS TO BE CONSIDERED.—We are all prone to form hasty opinions from insufficient observation. One can not form correct ideas after passing through an unfamiliar locality but once or twice, for we all know that the frost falls on the just and on the unjust, and not always two seasons alike. Local conditions must well be considered. This is really the keynote. Texture of soil, slope of land, methods of cultivation, season and system of pruning, time and amount of irrigation must all be taken into account. We all know that a tree weakened from any cause whatever, whether it be from the attacks of gophers, scale or drouth, whether from lack of care or fertilizer, will stand the cold much less than one kept in a normal, healthy state. The fruit, of course, partakes of the nature of the tree. There is a citrus orchard which I know planted on heavy soil, owner irrigates any and all times, uses little fertilizer, the land slopes in such a manner as to form a basin of the place, and on the south, but not on the north, is a tall windbreak. His place will rival the Klondike as a cold retainer, but not as a source of wealth to the owner. Were I he I would bud over to apples, cherries or something requiring cold weather to produce crops. This man put his windbreak in the wrong end and thus his feelings resemble those of the tenderfoot who thought the mule's bridle was a crupper. The shock "jarred him." This is one extreme. An example of an orchard totally unprotected by windbreaks is one seen no doubt by most of you who drove here this morning. The spot in some mysterious manner is protected from frost and also quite well from the wind. A casual observer would immediately conclude that the exemption from freezes is due to the absence of windbreak trees.

THE MORNING SUN.—It is pretty well conceded that trees or fruit "cooling off" in the shade, as the Irish might express it, suffer less than do those exposed to the early sun. Note the condition of the north side of the trees as compared with the south side, particularly the southeast side. A tall row on the east then protects about two rows of fruit trees from the early morning sun; and if the place has another row of cypress running north and south through the center, a third row is protected. The first two or three rows on the north of a line of trees are usually less damaged than those farther up the row—the same cause in each case. We have, then, say five rows, something like 150 trees in all, on a ten-acre piece which we may hope will escape with little injury.

CHARMS OF THE TREES.—It may not be amiss here, perhaps, to say a good word for the windbreak tree in general; it has an evil reputation among many who class it with the robber trees. True, it requires and takes a certain amount of what it requires for its own use from the orchard. Just as the watchman does who draws his salary. Improperly reared in its

youth, if not taught the virtue of self-control if allowed to have its own selfish way, it becomes a troublesome and exacting friend, but if properly trained from its infancy its virtues are many. I have tried to show that it is a protection against frost, it certainly is against wind. We are considering Cucamonga conditions now, for it is well known that little or no wind blows to the west of the Cucamonga wash. When planted on the road side it become shelter against sun and wind to the traveler of all degrees. Our southern California roads can scarcely of themselves be called beautiful by even the enthusiast, with no curve or break of any sort to change the monotony. Take then from them the shade tree and you destroy their beauty completely.

The orange is a lovely tree, but we need others as well. "Spring would be but gloomy weather if there were nothing else but spring." It is surely not proper to sacrifice everything to the orchard tree. There are none so poor who cannot spare a few feet of soil to the public good. The sordid soul whose sight is seared by a copper cent will not agree with me, but he is not here, he is at home to-day chasing a plow or a cultivator.

Lessened Evaporation.—The desert winds as well as the sea breezes, which blow so constantly here during the summer months, are thirsty visitors, and even well cultivated lands pay toll. Observations made in sixteen forestry stations in Germany show a marked saving effected by the woods, so says an authority. Of the rainfall an average of 42% was evaporation in the open and 24% in the forest. Windbreaks, of course, cannot properly be termed forests but the same result in a lesser degree will be noticed. On a place here there is a row of tall cypress trees between two rows of lemons 30 feet apart. They are thus 15 feet from them. Contrary to general belief these fruit trees require but little more irrigation than do others in the same orchard not so placed; the reason is apparent, the cypress shade the ground and trees from the scorching summer sun and there is less evaporation from both tree and soil. The growth of our winter grasses when partially protected by an elder or some bush will be much greater than when totally exposed to the elements; this although the protector draws his pay for the soil which nourishes the grass. The cypress mingles very kindly with the citrus tree and can be safely used in the interior of one's place, but the eucalyptus is less kind and should only be used on the outside lines, where it can draw part of its sustenance from the road and incidentally from your neighbor. No small matter to be considered is the item of fuel. A good line of eucalyptus trees can be so trimmed as to furnish much fire wood, but don't, oh do not, do this to an avenue tree. In the words of the poet. "Oh, woodman, spare that tree!"

Summary.—To summarize, then, let us take four examples of places and call them for convenience Nos. 1, 2, 3 and 4. No. 1—Perfectly windbreaked, irrigated from north to south, no damage on north but some lower down and increasing as we leave the protection, except the last two rows, which are hurt less. No. 2—Partially protected, irrigated north to south; light windbreak on the south; little damage on north, increasing as we leave the hedge; bottom trees not sheltered from the sun hurt equally as bad as those farther up the row. No. 3—No protection at all; trees hurt about equally but perhaps less on north near the head ditch. No. 4—Windbreaks only on the south; water run north to south; damage about equally sustained by all trees except on extreme north near head ditch and extreme south in the shade. There are, of course, exceptions to these as to all rules, but as a general thing some local condition exists which offers a satisfactory explanation.

FRUIT PRESERVATION.

Fruit Pulping in Australia.

In answer to inquiries about fruit pulping for the export trade to Europe—an enterprise in which the Australians have already engaged—we give the following, prepared by Joseph Knight and published by the Department of Agriculture of Victoria:

Raspberries.—The pulping of raspberries consists simply in boiling the berries thoroughly, so as to destroy all germ life. No very elaborate appliances are required for the purpose. The jam factories usually employ steam-jacketed pans, which are used for jam making purposes; and, where such are available, they are the best, as the operation can be better controlled by that means than any other; but steam-jacketed pans are not absolutely necessary. The raspberry pulp shipped under the bonus regulations, and which was so highly spoken of last year, was put up under contract for various growers by a firm in a suburb of Melbourne, and the operation consisted simply as follows:

The raspberries were brought to the place—some in open casks, chiefly quarter-casks, standing on end, half or three parts filled, just as they were gathered in the orchard. The casks were not filled, as fermentation starts frequently before the whole can be treated. Others were brought in wooden buckets in which the fruit is usually sent to the market. The fruit having been weighed and tare deducted, each individual supply was treated separately, if in sufficient quantities to fill the boilers, otherwise two or more lots were put together of equal qualities. These were then tipped into a large-sized copper boiler built in bricks, such as is usually found in farmhouses, the fire is applied, and the raspberries boiled in their own juice for about one hour, the contents of the boiler being kept constantly stirred with a sort of paddle, so as to scrape the sides and bottom of the boiler, to prevent the fruit from caking and burning, which would seriously damage the quality of the pulp.

The stirring must be continuous, whether the pulping be done in steam-jacketed pans or an ordinary boiler. An ordinary copper boiler will answer the purpose, but the thicker the copper the less risk of scorching.

Having boiled the fruit for, say, one hour, at a steady boiling point, it will be found that all seed and ferment germs will be destroyed. The practice at the place referred to is to draw out the fire and run or ladle the pulp into open-ended casks; while this is being done, one is engaged in filling up the tins with an ordinary half-gallon dipper by the aid of a funnel; one hand takes the tins to and from the person ladling, and another is engaged in soldering them down immediately. The soldering consists of fastening a small piece of plain round tin, known as stud, over the hole, which is about 2 inches in diameter, and admits a fair-sized funnel pipe. It is not desirable to have it less, as the quicker the tins are filled the better. In no case should the contents fall below 180° F. before it is hermetically sealed. This simple operation is all that is required to preserve fruits of any kind, and it is surprising that our orchardists do not put up more of their fruits in this manner and dispose of them locally, instead of sacrificing them, as is frequently done when forwarded in a perishable form to city markets.

Tins.—The tins in which raspberry pulp is exported under the bonus regulations hold four gallons each, and are identical with the ordinary kerosene tin; but it is advisable to have a somewhat heavier gauge of tin, as the jarring in transit is apt to cause leakage, when, of course, the whole contents are destroyed. If the pulp has been properly preserved, the tins, when filled and soldered down, should show a compression in the sides and ends. Owing to the shrinkage of the pulp as it cools, and the absence of air to fill the vacuum, the atmospheric pressure causes these indentations; but if there be any defect in the tins, or imperfect sterilization, fermentation takes place and causes the sides and ends of the tins to bulge outwards.

The usual percentage in reduction in weight of raspberries through boiling is about 5% or 6%; but the inclination in some is to keep the weight up, which is a mistake, as the water has to be drawn off when it is to be made into jam. The aim should be to put up a first-class article either for home use or export purposes.

Apricot Pulp.—This differs from the pulp of small fruits. If it is intended to export, the trade practice must be followed. Many mistakes have been made in this respect. Instead of following the recognized system established in the London market of putting up the fruit in 10-pound tins, the 4-gallon or 45-pound tins are frequently used. This, of course, ends in disappointment. What is wanted in the London market is good, sound fruits, the quality of which is determined by the purchaser on opening the tin.

The term "pulp" when applied to apricots is a misnomer. The apricots are halved, the pits or stones removed, and the raw fruit packed in the tins firmly. The tins are usually round, size 6 inches or 5¾ inches diameter and 10 inches deep, holding 10 pounds. This is the size and form sent here as samples from London, and which was selected from the best shippers. Pulp is exported from the south of France and Italian ports in this form, and our advice from leading firms at home is that to obtain the best price this form of package must be adhered to. The package contains ten tins in a case, or 100 pounds net. After the tins have been packed with fruit it is scalded in the tins, similar to canned fruit, only that little or no water is added. It takes some time to get the heat to boiling point through the body of the tin, which must be done in order to preserve the contents. When the tins are sufficiently processed it will be found that the apricots have settled down considerably, and the tins should be filled up again with scalded fruits, and the stud soldered down with a vent hole open; and, to prevent mistakes, the tins are again let down in the bath, and, when up to boiling point, the vent is stopped and the tins removed and cooled down. They should be placed separately so as to cool quickly.

The whole process is simple, but requires care, as "blown" or "swellhead" tins are sold for half price, or less, according to their condition.

It is advisable, in getting tins made, to have the stud 3 or 3⅛ inches wide, as it is difficult to get the scalded fruit in when filling without breaking, which is very undesirable. In some of the sample tins obtained the whole top was left open. This fitted inside the bordered edge, similar to our meat tins, and was soldered down after refilling, leaving vent hole only. This is a much more convenient system where there is skilled labor employed for soldering, but not to be recommended otherwise. I would point out that the refilling is important, as the contraction is considerable, and tins very unsightly when sealed, and, of course, must be underweight and suffer in price accordingly. After the tins are soldered they should be cooled as soon as possible. Some recommend placing them in a trough of running water. No doubt by this means color and flavor are improved, but it is rather severe on the tins. But if placed in rows, 1 or 2 feet apart, with battens or something to keep the upper ones apart, they will soon cool down. It is not advisable to incase the tins for a fortnight or so, in order to detect any defection which may have developed through leakage of air or any other cause. Fermentation, as a rule, develops shortly after treatment, if kept in favorable conditions for its development, and, if taken in time, should be dealt with as described.

The tins are packed in two rows, five in each, in a case. Some of our shippers are having a division put in, as the slings in shipping draw the boxes together and damage the tins inside. This is, I think, a wise course. Others, again, are putting six only in a case, while one shipper intends to put eight only, and have a division also. The objection to this is that it is a departure from the trade practice, and it is questionable if it is wise to do so.

Testing Tins.—The usual method of testing the tins is to submerge them upside down in boiling or very hot water, so as to confine the air within. The heat causes the air to expand and force its way out of any leakage there may be in the soldered seams. This may be readily noticed by a stream of bubbles rising from the defect. The spot can them be marked and remedied. Much of the failure in preserving is due to neglect in this matter.

In putting up pulp for export it should be borne in mind that the quality of pulp is taken into consideration in fixing the price, a watery pulp being of less value to jam makers than a good, solid body of fruit.

ANOTHER ACCOUNT.

Mr. Stuart Hogg, orchardist at the Wagga Wagga Experimental Farm, writes for the Agricultural Gazette of New South Wales as follows: Pulping is a very simple and efficacious method of preserving fruit for storage or transit, to be converted into jam at some later date. When one considers the thousands of tons of fruit that literally rot and are wasted simply from lack of the adoption of such a simple process as pulping, one is apt to accuse the Australians of being neglectful of their opportunities. If a good class of pulp were placed upon the London market, instead of letting the fruit rot upon the ground, it would give a very remunerative return. It will pay well, as some of the more enterprising Australians have shown.

The fruit is picked as in the same condition for canning—that is, firm and sweet. At the same time there is no waste, as the overripe fruit may be used as well. All the stoned fruits are pitted and placed in a steam-jacketed kettle, a little water added. The whole mass must be constantly stirred, no sugar being added. Now, the most essential thing in pulping is the cooking. The old theory of cooking merely for the expulsion of the air has exploded, and we find that the pulp must be cooked for such a time as to kill all germs of fermentation.

Immediately the pulp is cooked it is placed in tins and the caps soldered down, care being taken to fill the tins to the brim, the size of the tins generally in use being 10-pound tins, these being round, and 45-pound tins, being square. If, after the tins have been closed down, any of them exhibit signs of swelling, it is a sure sign of insufficient cooking. The pulp from these must be emptied out and recooked for as long as originally—in fact, a few minutes longer. It is quite optional as to whether the fruit is peeled for pulping or not.

I will now give you a list of the different times for boiling the different fruits for pulping:

	Minutes.
Apricots	25
Peaches	30
Nectarines	30
Plums	30
Figs	35
Cherries	30
Pears, soft	30
Pears, hard	35
Quinces	35
Apples	30 to 35
Gooseberries	25 to 30

This list, of course, does not apply to every condition of the fruit, and one can become perfect only by practice. At the same time, it is sufficiently adequate to start upon.

To Make Jam.—Now, supposing one were the recipient of a tin of pulp and wished to convert it into jam. For every pound of pulp add about ¾ pound of sugar and boil for about thirty minutes. Speaking of jams reminds me that dried apricots make splendid jam. Take 1 pound of dried apricots. Having washed them in clean water—to let the tap run on them is a good plan—place in a round, flat dish, say an enamel basin. Then cover them with boiling water and allow to stand twelve hours. To this add 1½ pounds of sugar and boil for thirty minutes. This will result in 4½ pounds of delicious jam.

Agricultural Review.

ALAMEDA.

PRUNES FOR BRANDY.—Niles Herald, May 17: The Niles Co-operative Fruit Association shipped a car of twenty-eight tons of prunes to Livermore on Wednesday to be distilled into brandy. They have orders for 134 tons more at the rate of about fifty tons a week. This will assist in cleaning out their warehouses.

PROSPECTS OF HEAVIEST GRAIN CROP IN YEARS.—Livermore Herald, May 18: Before the rain the farmers, with a few fortunate exceptions in the northern part of the valley, saw absolute failure staring them in the face, but two inches of moisture has made a vast difference. Grain that could not have withstood another week of dry weather has revived and will make a heavy yield. F. R. Fassett made a trip through the northern part of the valley the first of the week, and he says that he has not seen such a prospect in twenty years. He is especially enthusiastic over the Martin ranch, which has several hundred acres of grain which he says he has never seen equaled. Martin Nevin and other farmers who have visited all sections of the valley within the past week or two say that the grain crop will be the largest in the history of the valley. The heads of the wheat are larger than usual, and under the influence of the prevailing cool weather are filling well. Barley generally has made a good stand, but the heads are small.

BUTTE.

GRIDLEY CANNERY WILL RUN.—Biggs Argus, May 17: H. Bendel Jr., who has been selected to manage the Gridley cannery this year, says that the factory will open about the first of July, with the promise of a good run. About 500 women and girls will be offered employment by which they can earn a neat sum of money during the season. The ground about the factory affords splendid camping grounds, well shaded by oak trees, where tents may be pitched convenient to pure water and fuel. The camp grounds will be watched over by the management, and the women may feel as safe and comfortable as at their own firesides.

CONTRA COSTA.

BLACK LEG AMONG CATTLE.—Oakland Enquirer: It is reported that black leg has made its appearance among the cattle of the Moraga valley, and that stockmen are losing no time in vaccinating their cattle. The disease is believed to be confined to a very few cases, but the stockmen are taking every precaution to prevent its spread.

FRESNO.

SHEEP RAISING ON THE DECLINE.—Fresno Republican, May 17: Lee Blasingame went to San Francisco last night en route to Oregon for the purpose of buying sheep. He has already purchased 6000 head and says he may buy as many more. He will drive them into California, and will then ship them to Sacramento and San Joaquin counties, where they will be turned on the stubble fields. He will fatten them to sell them at Christmas time. Mr. Blasingame says that since the Government excluded sheep from the Federal reserve land the industry in this county has received a death blow, and there are very few sheep in Fresno county now, while a few years ago the industry was a very important one.

GLENN.

WILL HAVE FRUIT.—Willows Promoter: Considerable fruit will be harvested in and around Fruto this year. The last frost did not do as much damage as was at first supposed. On the Kelley ranch a fair crop of pears, almonds and prunes will be gathered. The grain in that section is also in excellent condition, although before the rain doubts were entertained as to whether it would make hay.

RATTLESNAKES ABUNDANT.—Willows Journal: For some inexplicable reason, the lower mountains or foothills are infested with an unusually large supply of rattlesnakes. It behooves people living in or visiting such sections to be prepared, as the rattlers will bite. Powdered sal ammoniac applied to the wound is a sure cure. If water is not to be had, put a little spittle on the wound and cover with the ammonia; when it turns green, remove it and put on a fresh supply. Continue as long as the ammonia is discolored. Sufficient quantity can be carried in the pocket without any inconvenience. It can be used on animals as well with the same effect. Do not let little children wander carelessly in any section where the digger pine grows; the tree and the rattler thrive together.

KERN.

LEGAL BATTLE OVER SICK HENS.—Bakersfield Californian: A peculiar damage suit has been brought by J. W. Van Damme against Mr. Worden, which has been banging fire in the Kern City courts for several months. The case is based on damage to alfalfa and the illness of chickens as a result. Complaints, cross complaints, demurrers, amended complaints, second amended complaints and motions to strike out have been worked up on behalf of the hens, and finally the third amended complaint has been filed. To start the legal ball rolling, Van Damme alleges that $50 worth of damages was done his field of alfalfa by the defendant's cattle; further, that by reason of such damage his hens, which depended upon the green grass for a livelihood, became sick because of the scarcity of grass and the production of eggs was thereby greatly decreased. Mr. Van Damme sues for $299 damages and cost of suit.

NAPA.

NO GLANDERS IN BERRYESSA.—Napa Register, May 17: Dr. W. D. Andrews, the veterinary surgeon, has just returned from the Berryessa valley. He examined several head of horses and mules on the Clark ranch near Monticello, where it was reported that a young man by the name of Kehoe had contracted the glanders from the stock. He applied the Mallien test for glanders and found the stock in a perfectly healthy condition. The young man probably died from some other disease, or if he had the glanders he contracted them elsewhere.

ORANGE.

THE WALNUT CROP.—Orange News: Walnuts have set well on the trees and a large crop is now the promise. In the sections visited by the hail storm on May 1st considerable damage was done. The trees generally are looking better than they have done at this season for several years.

RIVERSIDE.

CANTELOUPES FROM INDIO.—San Bernardino Sun: The 200 acres of canteloupes at Indio will soon be ready for the market. A. G. Tingman is in from the desert station and says that within two weeks crate lots will be shipped, but it is not expected that they will be sent out by carloads before June 10. Then they will be shipped rapidly as long as the season lasts, and will be easily the first on the market all along the coast. The discovery of the artesian wells at Indio promise to change the face of nature there. At depths of 500 feet and a little more wells are struck that send up great quantities of water, bubbling over the tops of 4-inch pipes that rise 2 or 3 feet above the ground, and furnishing abundance of the finest water for domestic use as well as for irrigation. Next season with additional wells and a proved market, a much larger acreage will be planted.

SANTA BARBARA.

EUCALYPTUS FOR FUEL.—Santa Barbara Press: P. C. Higgins of Carpinteria has recently been pulling up by the roots about 1200 blue gum trees which have reached an age of from 6 to 8 years, from which he is realizing 250 cords of wood. Some of these trees have attained a diameter of 18 inches. All have been raised from the seed on the place within the last ten or a dozen years.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian, May 16: A new berry has appeared in the local market. It is one of the productions of Luther Burbank and is called Primus. It is very much like the Loganberry in form, color and flavor.——Packers are claiming that Bellefleurs will not be a heavy crop this season. Orchardists, on the other hand, say that the trees are showing as many apples as they should have. The Bellefleur usually has a "short crop" outlook until summer. The tree foliage hides much of the fruit. The Pajaro valley Bellefleur crop—providing the "June drop" and high winds do not cut it—will be a big one.

SAN JOAQUIN.

GOOD GRAIN CROP IS SURE.—Stockton Mail, May 16: President Harrison of the Farmers' Union and Milling Company recently made an extensive trip through this and surrounding counties, going by buggy and train, for the purpose of getting an estimate of the season's grain crop. Everywhere he found conditions favorable, and in his opinion the grain is so far advanced and the soil in such a condition that nothing can hurt the crop now. He estimates that the crop in San Joaquin county this season will be between 100,000 and 125,000 tons, which is a good average.

ICE CREAM CHURNED INTO BUTTER.—Lodi Sentinel: While freezing a lot of ice cream for his soda fountain, Druggist Graham's freezer sprung a leak. Result: Three gallons of fine ice cream spoiled by salt. However, the genial drug man bethought him of a plan, at once novel and easy, whereby some return might be made from that cream. He simply let it thaw, put it into a churn and proceeded to make butter. When Mr. Graham had finished his churning and strained off the "buttermilk," he was the proud possessor of five pounds of butter. The only drawback was a vanilla flavor in it; but as it was used in cooking, that difficulty was speedily overcome.

SACRAMENTO.

OIL FOR COUNTY ROAD SPRINKLING.—Sacramento Bee: The board of supervisors has taken up the matter of sprinkling county roads with oil instead of water, as is done in some places in the south, and has authorized Supervisor Brooke to carry on a correspondence with the southern counties for detailed information. It is probable that the supervisors will experiment with a mile or two of road so as to determine the feasibility of the plan.

SIERRA.

NARROW ESCAPE FROM A FRANTIC HORSE.—Mountain Messenger: J. H. Adams, who came down from Chaparral Hill on May 2nd, had quite an experience with one of Joe Meyer's saddle horses. Mr. Adams was riding the animal on his way here, and, after traveling a short distance, the horse suddenly became unmanageable, rearing and plunging about in a very wild manner. During the animal's antics, Mr. Adams' boot became tightly fastened in the stirrup and he barely succeeded in extricating his foot and throwing himself from the saddle when the horse dashed over the bank, giving a vicious kick at Adams, knocking his hat off and barely missing his head. The animal continued its mad flight for some distance and finally jumped over a cliff about forty feet high, breaking its neck in the fall. The animal was apparently in good condition when Mr. Adams started out, and he can only account for its actions by its suddenly becoming insane.

SOLANO.

HEMP GROWN DOWN THE RIVER.—Oakland telegram: A consignment of eighty-eight bales of hemp has been received at the Oakland wharf for the California Flax Mills. This hemp came from Ryer island, in the Sacramento river. It is the first cargo shipped of the first crop of hemp grown on the island. The trial crop is reported a great success, the hemp growing to a height of 13 feet. About 250 tons of hemp will be obtained from this year's crop; and with twelve men steadily employed, it will require until August to prepare all of it for shipment to market. This hemp was grown on the ranch of Ettenger & Thomas.

EXPERIMENTING WITH FRENCH BEARDLESS BARLEY.—Dixon Tribune: S. R. Benninghoff sowed several sacks of French Brewing barley on his farm near Dixon this year as an experiment, and samples exhibited show that it could be raised with profit here. The grain is grown extensively in Oregon, where it produces abundantly. The heads are beardless and the grain makes excellent feed.

SONOMA.

DECIDES A HEIFER IS A COW.—Sebastopol Times: In an opinion handed down in the Superior Court, awarding judgment for the plaintiff in the action of M. L. Barnes against G. P. Woodward et al., Judge Dougherty virtually decides the momentous question raised at the trial as to whether "a heifer is a cow" in the affirmative. At any rate, the court holds that among other claims the plaintiff should recover damages for two "cows." About one of these cows the heifer question was raised. Judge Dougherty awards the plaintiff $148.74. This includes damages for the conversion of two cows, four tons of hay, some corn, potatoes and pumkins.

SUGAR BEETS.—Sonoma Index-Tribune, May 18: T. R. Rurkett, manager of the California and Hawaiian Beet Sugar Refining Company's farm near this place, reports that the sugar beets have taken a fine stand and that the prospects of a good crop are excellent. Mr. Burkett expects the yield to exceed 2000 tons.

DATE FOR WOOL SALE SET.—Cloverdale Reveille: Wool sales day has been agreed upon for Tuesday, June 11th. The date was set last Saturday when many of the wool growers were in town. Many of the wool growers stated that they were well pleased with the clip. It is free from burs and dirt, good texture and in quantity will turn out better than last year, which is accounted for by the reason that many more sheep were sheared this spring than last year, and also that the winter was very favorable.

FIRST PACK OF CHERRIES.—Santa Rosa Press-Democrat, May 16: The canning season opened on Wednesday afternoon at the local cannery. The first pack of cherries—about three tons—was handled by a large force of helpers, principally women. The cannery will pack cherries again on Saturday and will continue to do so as long as the fruit lasts. It is believed that the crop of peaches will be considerably larger than was at first expected. Manager Van Alen has many contracts for fruit. The capacity of the cannery is large enough to handle an immense pack.

SUTTER.

FRUIT WILL BE LARGE THIS SEASON.—Sutter County Farmer: Indications in the orchards in this section now are that all kinds of fruit will be large and of extra quality this season. The healthy condition of the trees with the abundance of moisture in the soil—the rainfall already being over 23 inches—is having a very beneficial effect in the maturing of the fruit. Where judicious thinning has been done, peaches are now from 1½ to 2 inches in diameter and will be whoppers by the time they are ripe. Other kinds of fruit are also making a remarkable growth.

THE CHERRY CROP.—Sutter County Farmer: Until the last few years the cherry crop in this section hardly supplied the local demand, but the increase in acreage has raised the output until now with only a fair crop there will be over eighty tons to dispose of. Messrs. Wilkie and Giblin have purchased most of the smaller crops, which with their own they are now delivering to the local dealers about one-half a ton daily and shipping about three tons to the Central California Canneries Co. at Emeryville near Oakland. Canners are paying from 2½c to 5c per pound, and the local market is brisk at 6c. It costs about 2c per pound to pick the fruit. The cherries being early here command good prices generally.

TEHAMA.

LOSS OF SHEEP BY LATE SNOW STORM.—Corning Observer: It is learned that W. B. Miller of Stony creek sustained a loss of 280 to 300 sheep when the band was caught in a late snow storm at the top of the summit. The snow fell to a depth of about 4 feet.

TULARE.

TALL WHEAT.—Visalia Delta: There are on exhibition here two bunches of grain from the Burns place, north of town, farmed by T. A. Hale, each bunch being nearly 7 feet high and showing an unusually large number of well-developed heads, the stalks and leaves being rich dark green in color, showing the presence of plenty of moisture. These specimens are the talest and handsomest yet shown in this section this season. The crop of wheat from which these were taken is expected to yield about ten sacks to the acre.

YOLO.

LONG BARLEY HEADS.—Winters Express: William Sims exhibited a bunch of barley heads which exceed in length any we ever saw. Some of the heads are within a fraction of 6 inches long and the others are 4¾ to 5 inches. A field of grain like that would yield 100 bushels or more to the acre.

ALMOND GROWERS MEET.—Davisville Enterprise: The Davisville Almond Growers' Association met Saturday afternoon on call of J. E. Larue, president of the Association. Mr. Larue stated that the object in calling an informal session at this time was for obtaining an estimate of the coming season's almond crop. A general discussion of crop prospects, not only of this district, but of others throughout the State, was engaged in, and, from all the information at hand, the Davisville district has the most flattering prospect of any locality in the State, but Davisville will fall short of last year.

THE CROP OUTLOOK.—Winters Express: In company with Henry Craner, the writer drove to Woodland Tuesday, going by way of the Davisville road, the Schmeiser ranch and Green's Corner, returning via Madison. Everywhere it was noticed that grain looked exceedingly well. Mr. Craner has been many years a resident of this county, and it was his verdict that, taking it altogether, he had probably never seen a better promise of a good crop. Some fields of barley were quite yellow, and a few days of warm weather will fit them for the harvester. The difference in the looks of grain since the recent rain is remarkable. Fields that two weeks ago were scarcely expected to be worth cutting, are now so thrifty that it would never be imagined they were anything else, and will produce good crops. Wheat heads, as a rule, seem to be somewhat shorter than usual, and it is not likely that the average yield will be as large as in some other years; but, unless some unusually trying weather occurs, the total crop will be a big one.

THE HOME CIRCLE.

Darkness and Dawn.

As seamen from a distant land
Lean silent on a vessel's side,
Shading their eyes with sunburnt hand
As slowly drifting with the tide,

Turn soft eyed as they dimly trace
The smoke rise from the roofs of home;
Whilst sheer across the ocean waste
The sinking sun lit up the foam;

When dropped the dark, uprose the breeze,
And they the fitful duties plied;
When morning dawned, the curling seas
Had rolled them to the harbor side;

So, oft in life a vision falls,
Dream-born athwart the ways of men,
Of summer lands and golden halls
Transcendent in their beauty—then

Falls down the dark of mind distrest;
Yet vaguely trust they in the hope
That, through the doom of darkness blest,
They with their omens ill may cope.

When morrow's dawning comes, they find
All golden in the land around.
Darkness had fallen, but night's wind
Wafted them to their Dreamland's ground.

—Robert W. Butters, in Chambers' Journal.

Unpractical Nathan.

"Nathan, hurry up and harness that hoss; it's almost meetin' time," and Deacon Grimshaw turned from the kitchen door with a frown on his rugged face. It was a standing grievance between father and son, harnessing the horse on Sunday morning to the carryall, and this morning the deacon was late dressing, and Nathan, being ready, was caught in the toils of the unwelcome task.

"I never saw such a lazy"—but Kitty was waiting with her father's necktie and a smile. "Come father, we shall have to wait for you if you waste any time in scolding," she said brightly, as she slipped the tie under his collar and deftly tied a four-in-hand.

Kitty was sixteen and her father's idol. She was fond of outdoor work, and often lent a willing hand with the planter and reaper, while Nathan much preferred indoor tasks.

"You are some comfort to me," Sissy, said the deacon, embracing her trim waist with his big hands, but Nathan——"

"Is going to be a credit to us after he has been to college," interrupted Kitty briskly. "Here he comes with the carriage."

A tall youth, slender and effeminate, came in at the door, and went to the sink with an aggrieved look as he rubbed soap on his hands, washed and rubbed with such pertinacity that his father exclaimed impatiently: "Come now, don't stand there and wash all day. We'll be late at church again."

"I'm not going," answered Nathan, shortly.

"Here, father, your hat is brushed, and we are all ready," said Mrs. Grimshaw, bustling in, her bonnet on and ready for the drive. She had planned to be there when Nathan came in, for the lad was obstinate and the deacon's tongue and temper sharp and quick.

They were half way up to the church before Mrs. Grimshaw ventured to remark softly: "He will never make a farmer. School is the only suitable place for him."

The deacon exploded: "Farmer! I should say not! Look at that hoss; I'm ashamed to drive into town with him."

"You send Nate to college, father, and I'll be chore boy for you," Kitty proposed eagerly.

"I'd ruther have one willin' girl than half a dozen finicky, unwillin' boys," replied the deacon, looking back into Kitty's smiling face. "I ain't saying, though, that you and your ma are going to pester me into spending good money on him. He don't deserve it."

The neighborhood was in sympathy with the deacon. It was an undoubted affliction to have a visionary, unpractical son, who touched each unpleasant task pertaining to the farm delicately, and with aversion; still he knew every bug and beetle which flew or crawled in the fields, and was better acquainted with the insect life than with the work on the farm. There was jeering and laughter when he came in contact with rural wits. "If I had such a dunce as that in my fam'ly I'd dress him up in petticuts fer a scarecrow," Farmer Gray was fond of saying. I seen him milk a cow onct, and, I sawn, I was sorry for the cow."

"He knows a heap about bugs, though," remarked another. "Likes bug hutin' better than he does his dinner. Hear about his perater bugs? He gathered a pan full of the critters one day when his pa and ma was gone to a neighbor's visitin', and when they got back the kitchen was a sight to behold. Nate had put 'em in the stove with jest enough fire to warm 'em up lively, and gone off to fix up a butterfly net. Of course, they crawled out of the stove and over the walls and ceilin'—you couldn't pint your finger where there wasn't a pertater bug crawlin'. It took Mis' Grimshaw considerable of a spell to get 'em swept down into a pail o' hot water, and she imagined she saw pertater bugs crawlin' for some time afterwards."

"Just like him. Set him shoveling sunshine and he's perfectly happy. Nothin' practical about him, and I'd give a dozen like him for one wide awake, sensible girl like his sister Kitty."

So far as his neighbors were concerned, Nathan was irredeemably sent to Coventry, but his mother and Kitty had faith in him, and lost no opportunity of urging upon Mr. Grimshaw's attention the idea of a college education for him.

"There certainly is something in him, father, though we're not bright enough ourselves to see just what it is," said the mother anxiously, as the time approached for the opening of school in the fall. "Nathan is lots wiser than the most boys in some ways. He came in yesterday with a great, green moth with the loveliest crescents on each wing; a moon moth, he called it, and you should have heard him go on and explain all about it, and the kind of grub it came from. It was real interestin'. I tried to have him show it to you, but the said you wouldn't care."

"Thought his old dad didn't know enough to care, I s'pose," Mr. Grimshaw replied, perversely ignoring the fact that he never had interested himself in his son's researches, except on one occasion when a fine crop of choice peas had been saved by Nathan's study of the insect pest which infested it. He had patiently picked every infected leaf, destroying them with better results than at the time of the potato bug affair, and his father had really given him credit for sense and perseverance.

"Well, father, you know you don't give Nathan much except scolding when he tries to talk to you about the things he likes," Mrs. Grimshaw said, reproachfully.

"Well, well, there is no other way as I see but to send him to school," exclaimed Mr. Grimshaw, in an injured tone. "When a man's wimmin folks get sot on anything, there ain't no peace for 'im nowhere; but, mind you, Roxanna, you and Kitty'll have to go without gimcracks while he is gone. It'll be a long, steady pull, I give you fair warning, for eddication costs like the dickens. No use of you thinkin' of carpets or bedroom sets for the next four years."

"All right, father," Mrs. Grimshaw responded, a glad smile on her face; "we'll promise not to pester you for anything, Kitty and I, that we can possibly do without."

Nathan was almost too happy to eat or sleep when he learned that at last he was to have his heart's desire, and he went about in a maze of delight which so irritated his father that he would have revoked his decision had he been in the habit of going back on his word.

"You must be nice to your pa, and willing to help him when he is doing so much for you," urged Mrs. Grimshaw, anxiously, as she stitched away on his college outfit, which advice Nathan honestly tried to follow, with but indifferent results. Nathan was unmistakably Nathan, in spite of his grateful desire to help.

The house was strangely silent and lonely after he left, and even his father wore a lost, dazed look.

"I had no idee I'd miss him so," he said one day as he caught his wife crying behind her gingham apron by the pantry door. It's been on my tongue's end to call him to do something for me a dozen times since he's been gone."

"The fact is that Nathan has been a great deal more help to you than you were willing to give him credit for, and I am glad you are beginning to sense it," replied the mother with reproachful spirit.

Four years of sacrifice followed Nathan's advent into college life. Having put his hand to the plow, Mr. Grimshaw had no intention of turning back, though it seemed to him that Nathan's demands for money were both exorbitant and useless at times, and especially in the last year of his course.

"Nate will be ashamed of his old daddy when he gets home," he remarked, as he surveyed his best suit ruefully.

"Never you mind, father. I will ink the seams and pare off the fringe, and if Nate dares to be ashamed, we will chuck him into it, and give you his graduating suit," cried Kitty. "It will fit you nicely with a ruffle on the bottom of the trousers."

Nathan was coming home next week with a title attached to his name, and the girl was almost wild with delight.

"Professor of bugology," farmer Gray said scornfully. But the neighborhood had never admired Nathan, and still less now, sporting a mustache and a slender cane.

With all his faults Nathan had a heart, and he was shocked when he looked about the house and noticed the worn and faded condition of things, the braided mat which covered the patch in the parlor carpet, Kitty's hat in its third season of use, and his father's best suit, a pathetic contrast to his own.

His thin lips came together with decision as he saw further signals of sacrifice scattered all over the farm, but said little.

It was not his habit to boast, or promise prematurely.

"What on airth are they good for?" Nathan was showing a large and carefully classified collection of botanical specimens, at which his father looked dubiously. He pursed his lips also in a depreciatory way as Nathan exhibited his collection of specimens in natural history. "It is the most valuable collection in the State. Prof. Saylor says that, and he is authority."

"It won't buy nothin', and I don't see no sense in sticking poor, harmless little critters on pins that way," returned Mr. Grimshaw, with an inconvenient recollection that one of his best cows had gone to pay for the cases.

"I'm sure they look real pretty," exclaimed Kitty. "Nathan has been telling me all about them, and I would like to go to college myself."

"You would like to go, too, wouldn't you, mother?" retorted Mr. Grimshaw, with good-natured sarcasm. "I'd better get out of here before I get to hankering after an eddication myself."

His eyes opened wide a few weeks later, as Nathan came to him with a letter, offering him a position as teacher of natural science at a salary which seemed to his father simply amazing.

"Good land, boy, accept it quick, afore they have a chance to back down on it," he cried. "That will pay better than running bugs on pins I reckon."

"Running bugs on pins isn't such bad business, either, father," replied Nathan, producing another letter after a moment's hesitation."

"I did not intend to tell you until they were gone, but I have had an offer for collection."

"Great Jiminy!" exclaimed Mr. Grimshaw, as he read the letter, "college folks must be crazier than loons. I wouldn't give $5 for the whole pack, let alone $500."

"Because you do not understand their value," Nathan replied, with natural triumph. "You have made many sacrifices for me," he added, with modest gratitude, but after all, father, I think it will pay."

It did pay. Deacon Grimshaw ceased to be an object of pity among his neighbors, and began to allude to "my son, Prof. Grimshaw," with a pardonable pride. Little by little the home was modernized and refurnished, and the farm provided with every help which modern science could supply.

When in after years the old people gave up the active labor of life, it was Nathan upon whom they leaned for advice. Nathan who supplied them with luxuries and pleasures which they otherwise could not have enjoyed, and Kitty, now a happy matron in a home of her own, sometimes levels a naughty "I told you so" at her gray-haired father.—Mrs. F. M. Howard, in the American Boy.

Telegrams.

"Select some word containing at least eight letters, and announce that a prize will be given to the guest who will write the best telegram in a given length of time—the words of the telegram to begin with the letters in the chosen word taken in their order," are the instructions of a contributor to Housekeeper who, in describing the game, says:

"At a recent entertainment the word Washington was selected and among the telegrams written the following were considered the most amusing:

"When Aunt Sarah has internal neuralgia give two ounces nervine." This was objected to when put in competition for the prize, on the ground that the dose of nervine was too large.

Then came "Watch anarchists, Sam has informed. Now going to organize nabobs." There was a tone to this which pleased many because of the late news of the New Jersey anarchists, and it was urged that the nabobs ought to organize; but it was finally voted that the telegram was not sufficiently businesslike to win the prize.

The fourth word in the next telegram stood between the writers and the prize. "Where are Sam's habiliments? I never got them of Nathan." In vain it was urged that the dispatch was sent by a Boston woman. The

THE JOY OF THE

house is the baby. No matter how many have come before, the latest arrival brings joy to all.

When the little one takes his first glimpse of the world, he is in, it is a minute of keenest joy.

Father is proud, mother is fond, brother is eager, sisters are tender, nurse is devoted; the whole human world is kind.

There is another, an under, world with enemies in it.

When baby gets into its shadow, be quick with Scott's emulsion of cod-liver oil—he is sure to get into its shadow; let him get no futher than into the edge of it. Health is the baby's life.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

judges were firm in their opinion that the telegraph operator would never use the word habiliments without a protest which would result in a shorter word being selected.

"Will arrive Sunday. Harry is not going to organize negroes." While this was considered a well-written telegram in that it would give the one who received it considerable information, objection was raised to the wording. "Harry will not organize, etc.," was noted to be more like a real telegram, and so this, too, was shelved. Then came the following:

"Wallace and Sarah here. Ira nearly gone. Tumor on nose."

Could any telegram tell more in the same number of words? Try to write a better one, and you'll not wonder that the author of this was given head prize.

The Cause of Baldness.

The hair of the head was evidently intended by nature as a protection to the delicate brain substance, and it would, no doubt, answer this purpose admirably if it were given the opportunity, as we see it perversely does in the case of savages, football players and others who need such protection little. It is generally supposed that baldness, like gray hair, is a necessary accompaniment of advancing age, but this is only because the older a man is the more time he has had to neglect and abuse his hair, and so the more likely he is to have lost it. Some men are more prone to baldness than others, because of thinness of the scalp, which interferes with the proper blood supply to the hair roots. This is often a family failing; but in such cases baldness might be prevented or postponed for many years by care. In a few instances the hair falls out as a result of some special disease, but for the great majority of men there is absolutely no reason why, if properly treated, the hair should not last as long as the man. The chief cause of baldness is pressure by the hat, which contracts the blood vessels and so interferes with the nutrition of the hair bulbs. It is probable, also, that the shutting off of light and air by the hat helps the mischief. An unhealthy condition of the scalp results, the sign of which is a plentiful amount of dandruff. There are many facts which go to prove the truth of this opinion. In the first place, women rarely become bald. They wear hats, it is true, but their hats are not air-tight casings, nor do they make pressure around the head like a man's hat. Then baldness is almost unknown among savages who wear no hats, and is comparatively uncommon with men in the tropics, where very light hats are worn. Laborers are less prone to baldness than professional and business men. Laborers generally wear soft felt hats or caps, which are apt to be pushed to the back of the head, consequently the scalp gets plenty of light and air. As further proof, we find that the baldest men usually have sufficient hair at the back and on the sides of the head below the hat line. The inference is plain—wear a soft hat or none at all. If custom forbids this, then the best a man can do is to wear his hat as little as possible, and never to keep it on in the house or office.—Youths' Companion.

BILLSON—Now, in India, Great Britain maintains a corps of war elephants which are trained to march in single file. Bilkins—That would be a sort of a trunk line, wouldn't it?

REPORTER—I am told that your trusted cashier has left the bank.

Bank President—Did he? Thank heavens we have the building to start with again!—Ohio State Journal.

GIGGLETON—I nearly died laughing last night.

Parker—Which one of your jokes were you telling?—Tit-Bits.

NELL—I saved a man's life to-day. Belle—How so? Nell—He said he was dying to meet me, and I consented to an introduction.

The Sensitive Kettle.

"I don't feel well," the kettle sighed,
The pot responded, "Eh?
Then doubtless that's the reason, marm,
You do not sing to-day."

"But what's amiss?" the kettle sobbed,
"Why, sir, you're surely blind,
Or you'd have noticed that the cook
Is shockingly unkind.

"I watched her make a cake just now—
If I'd a pair of legs
I'd run away!—oh, dear, oh, dear,
How she did beat the eggs!

"Nor was that all—remember, please,
'Tis true I tell to you—
For with my own two eyes I saw
Her stone the raisins, too!

"And afterward—a dreadful sight!—
I felt inclined to scream!—
The cruel creature took a fork
And soundly whipped the cream!

"Now can you wonder that my nerves
Have rather given way?
Although I'm at the boiling point,
I cannot sing to-day."

—Felix Leigh in Family Herald.

Remedy Against Mosquitoes.

The United States consul at Maracarbo, Venezuela, writes:

"A simple remedy against mosquitoes has been employed in several places in South America and is equally well adapted to the temperate zone. It consists in planting the castor oil plant (Ricinus communis) or "palma christi," around the house and premises.

In cold temperate climates the castor oil plant grows to a height of 4 or 5 feet; in these countries it becomes a tall tree and is perennial. The smell of the plant, it seems, is disagreeable to mosquitoes and other insects, and it is an acknowledged fact that where these plants grow, few mosquitoes will be found.

"My personal experience bears this out. My residence is surrounded by plantain and banana trees, and I have been much troubled in the past by the great number of mosquitoes which gathered between the leaves. Following the example of old settlers in the country, I planted the castor seeds, which grew up in profusion, and there are now no mosquitoes to be found among the plantain and banana trees, although I keep the ground well irrigated. By keeping branches and the seeds of the plant in rooms, the mosquitoes are driven away from the latter.

There are several varieties of the castor oil plant. In this country there are two—one with brown nuts and the other white in color with a kernal tasting like a fresh almond."

Testing Drinking Water.

The supply of drinking water for the family should be tested at least once a year. Water that at one time is pure and wholesome may become too impure for use, yet it may be without color, and have no odor or taste to show its dangerous qualities.

A simple test of drinking water is the Heisch sewage test. Fill a clean pint bottle three-quarters full of the water to be tested, and dissolve in it half a teaspoonful of pure granulated sugar. Cork it and set it in a warm place for two days. If, during this time, it becomes cloudy or milky it is unfit for domestic use. If it remains perfectly clear it is, probably, safe. Be careful that the bottle is absolutely as clean as you can make it, and the sugar pure.

The second test is also a simple one. Obtain from a trustworthy druggist about 5 cents' worth of saturated solution of permanganate of potassium. Add about five drops of this to a pint bottle of water. This will turn the water a beautiful rose-purple. If there is any considerable amount of organic matter, this color will give place in the course of a few hours to a more or less dirty reddish brown. If the color of the water in the bottle remains for twelve hours unchanged from the rose-purple hue it assumed when the permanganate of potassium was first added, it may be considered free from organic contamination.

DOMESTIC ECONOMY.

Domestic Hints.

BIRDS' NEST SALAD.—Color Neufchatel cheese a light green with pistachio coloring, roll into balls the size of birds' eggs; arrange on a bed of lettuce leaves and serve with Mayonnaise dressing.

SPINACH.—Pick over, wash in five tepid waters, and soak in cold water till free from grit; cook in boiling salted water till tender. Drain, rinse in cold water, drain dry, chop fine, and heat again in butter with salt and pepper. Serve with lemon juice or vinegar.

PARSLEY AND BUTTER SAUCE.—Put two ounces of butter over the fire and melt it. Thicken then with a very little flour. When quite smooth, pour in two cupfuls of boiling white stock. Add another ounce of butter, a few drops of lemon juice, heaping tablespoon of chipped parsley and serve.

RAISIN PIE.—One cup of seeded raisins, one-third of a cup of water; cook for five minutes; have an ordinary pie tin lined with good paste, put in the stewed raisins, sprinkle with three tablespoonfuls of sugar and one teaspoonful of flour; add upper crust and bake. This will keep as well as mince pie.

DEVILLED KIDNEYS.—Skin the kidneys and then parboil them a bit. When cold, slice in thin slices. Fry these in butter till quite brown. Take them out, add a little more butter to the frying pan, season it with salt and pepper, and thicken with a little flour in which has been stirred some mustard. Thin the sauce a little, if liked, with a tablespoonful or so of good stock.

CALVES' LIVER AND BACON.—In addition to frying the liver in bacon, an appetizing breakfast dish may be prepared by boiling the liver first till tender. Cut it then into very thin slices, and rather small slices. Roll each slice in a slice of bacon and fry the bacon till brown. After taking from the pan, stir two or three slices of onion in the fat, lift them out and pour the fat over the bacon before serving.

EGGS WITH ASPARAGUS.—Have some cold boiled tips of asparagus and cut these into very short lengths. Sprinkle them with salt and pepper and a little lemon juice. Let them stand so for ten minutes. Then fry in butter the required quantity of eggs. Take them out and add to the butter in which they were fried the asparagus tips. Stir about till they are heated through, and arrange them around the eggs.

SCALLOPED SALSIFY. — Take some roots of salsify, boil it for half an hour in salted water, drain, scrape and cut into small rounds. Butter some individual entree dishes of china or silver, sprinkle them with bread crumbs, fill with the salsify, mixed with a little cream sauce, flavored with lemon juice and essence of anchovy. Sprinkle the top with bread crumbs, put a morsel or two of butter on each and bake a light brown.

FILLET OF BEEF.—Buy the short fillet under the rump, using two if needed. Wipe, remove the fat, veins and tendinous portion in the middle. Trim into shape, rub with salt, pepper and flour, and cover with beef fat and some extra kidney suet, or lay a few slices of salt pork over the top. Put two slices of pork in the paking pan with a slice of onion and bit of bay leaf. Put the meat on this and bake in very hot oven thirty minutes. Remove scraps and serve with mushroom sauce poured round the meat.

PIKE OR PICKEREL.—Clean and wash a fresh fish of three or four pounds weight. Tie it in a piece of netting, or lay it on the drainer if you have a fish kettle. Cover with boiling water, add two level tablespoonfuls of salt, two tablespoonfuls of vinegar or lemon juice, a sprig of parsley, a dozen pepper corns and one small onion, sliced. Let it cook slowly, a mere bubbling, about half an hour. Lift the fish carefully from the kettle, drain it and slice it off on to a hot dish, on which is a folded napkin, to absorb the moisture. Garnish with parsley and lemon points, and serve with horseradish cream sauce. Cook two rounded tablespoonfuls of flour in one rounded tablespoonful of butter till smooth, add four tablespoonfuls of fresh, grated horseradish. If this cannot be procured, season with salt and pepper and two heaped tablespoonfuls of capers.

STEAMED APPLE DUMPLING.—A two-quart granite pan two-thirds full of sour apples, cut in eighths, and half a cup of water. Butter the edge of the pan and the inside of the cover. Cover with crust, made with one pint of flour, four level teaspoonfuls of baking powder, and half a teaspoonful of salt, wet with one scant cup milk, just stiff enough to roll out. Cover closely and steam one hour, or cook on top of the stove half an hour, with a trivet under the pan to keep the apple from burning. Serve at once with lemon sauce. Put a large plate over the pan, invert, leaving the crust on the plate with the apple at the top.

Hints to Housekeepers.

To stuff an olive, peel the pulp from the stone spirally, as one peels an apple, being careful not to let it break. Then make a tiny ball of the filling and fold the strip about it.

A delicious sandwich is made by spreading thin ovals of bread with equal parts of finely chopped celery and walnut meats, mixed with chopped olives and a little mayonnaise.

Old potatoes should always be placed over the stove in cold water and new potatoes in boiling water. Let the old potatoes stand in ice water for an hour or two after peeling and before cooking.

Too much baking powder is often used in doughnuts and fried drop cakes, causing the dough to burst out in very irregular bubbles on the edge, which soak fat and make the doughnuts heavy and unshapely.

Aluminum is now being used extensively as a material for toilet articles. It has advantages over silver in being light in weight and never tarnishes while it costs less and can be treated in an equally artistic manner.

It is said that if a lump of sugar is dropped into a metal teapot when it is put away after being used, the disagreeable odors and flavors that such a pot is apt to impart to tea will be obviated. The best way to avoid them, however, is to use an earthen teapot.

The constitution of a celebrated grease eradicator, the right to make which has made four millionaires, is as follows: Ammonia, two ounces; soft water, one quart; saltpeter, one teaspoonful; fine soap, in shaving, one ounce; mix thoroughly and keep in covered vessels.

A pure cream of tartar baking powder makes the dough rise slowly, as the gas is not all liberated simply by moisture. Therefore, if you would have the best results, either put the biscuits in an oven of moderate rather than intense heat that may have time to rise before a brown crust is formed, or let them stand ten minutes to rise, and then put them into a hot oven.

With a can of deviled ham one can work wonders, sometimes, if one has a reliable cue to begin operations. For instance, have a small can of it and mix it through two gills of cream whipped stiffly. Add to this, too, a gill of consomme in which is dissolved half an ounce or even less gelatine. Put this into paper cases or into little china moulds and set on ice for as long a time as necessary, or longer, and unmould when serving.

Creamed chicken or creamed sweetbreads may take the place of creamed oysters, and are really more wholesome and more easily procured. Parboil the sweetbreads and pick them apart; to each pair allow one can of mushrooms, washed and chopped fine. Stir these into a pint of cream sauce. Where chicken is used, to each three pounds of chicken, that has been most carefully boiled and cut into dice, allow a can of mushrooms and a pint of cream sauce.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 22, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as fellows fer the week named, price being per bushel:

	May.	July.
Wednesday	70¾@71⅞	71½@71¾
Thursday	72¼@71½	71⅜@71
Friday	72 @72⅞	71⅜@72⅛
Saturday	72¼@73⅜	71½@72⅞
Monday	73⅜@73½	73¼@72½
Tuesday	73⅝@74¼	72¾@73⅝

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpoel were as follows for the week:

	July.	Sept.
Wednesday	5s 10½d	5s 9⅝d
Thursday	5s 10¾d	5s 9⅝d
Friday	5s 11 d	5s 10⅛d
Saturday	5s 10¾d	5s 9¾d
Monday	5s 11 d	5s 10 d
Tuesday	5s 11 d	5s 10 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Beard for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	——@——	1 03½@1 02⅝
Friday	97¾@ 97⅞	1 03¼@1 02⅞
Saturday	——@——	1 03½@——
Monday	——@——	1 03½@1 02½
Tuesday	97½@——	1 03⅛@1 03
Wednesday	——@——	1 02⅞@1 03¼

WHEAT.

The wheat market has displayed very little life since last review and firmness has alse been lacking. Crop prospects, according to latest advices from the wheat growing sections of this and foreign countries, are in the main fair to good, and with these conditions the development of firmness would be phenomenal. The world's area in wheat has for years past been much larger than warranted by the consumption, and without crop failures in a considerable portion of the acreage, goed prices or even fairly remunerative figures for all the wheat produced is net to be expected. Rains the past week in the Missouri river section give indications of a liberal yield in that region. While no bumper crop is leeked fer in this Statc, the yield is likely to prove a fair average, as compared with the past eight or ten seasons, and the surplus will probably be more than sufficient to satisfy all foreign demand. Ocean tonnage continues in light supply, and ocean freight rates are firm, the latest spot charter indicating an additional advance of 1s. 3d., or about 30c. per long ton, equivalent to not less than 1¼c. per cental, which has to be either added to the price of wheat abroad or be deducted from the price of wheat here. It has been the misfortune lately of the local market to have to stand all the burden of appreciation in freight rates, and at the same time have to contend with depressed wheat values abroad. The visible supply in the United States cast of the Rocky Mountains is reported at 42,498,000 bushels, showing dccrease for week of 3,263,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as fellows for the options named:

May, 1901, delivery, 97⅞@97½c.

December, 1901, delivery, $1.02⅜@1.03⅛.

Wednesday, at regular neon session of Call Board, May, 1901, wheat sold at —c; December, 1901, $1.02⅞@1.03⅛.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	97½@	98¾
Oregon Valley	1 00	@1 02½
Washington Blue Stem	1 00	@1 05
Washington Club	98¾@1	02½
Off qualities wheat	95 @	97½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s2d@6s2½d	6s1½d@6s2d
Freight rates	—@40s	36¼@37½s
Local market	$1 90@93¾	$1 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

In quotable values there are no changes to note, but the market inclines in favor of consumers, large transfers, especially of other than most favorite marks, not being possible at full current figures. Supplies are liberal for this time of year, and arc sufficient to accommodate a much larger demand than is being experienced at present.

Superfine, lower grades	$2 25	@2 40
Superfine, good to choice	2 50	@2 75
Country grades, extras	3 00	@3 25
Choice and extra choice	3 25	@3 50
Fancy brands, jobbing	3 50	@3 65
Oregon, Bakers' extra	2 75	@3 15
Washington, Bakers' extra	2 75	@3 25

BARLEY.

There is no improvement to record in the general condition of this market, quotable values for all descriptions of barley continuing at a low range, and the movement not particularly brisk at the decidedly faverable figures to buyers which have been lately current. Business has been mostly in feed descriptions, efferings being principally of this sort, and mostly of good average quality, causing prices to keep within narrower bounds than ordinarily. Brewing grades were not offered in very heavy quantity and were, as a rule, rather steadily held, but demand was of a light order, making it impossible to effect free sales at full figures. Trading in the speculative market was slow and fluctuations were of small compass.

Feed, No. 1 to choice	77½@	80
Feed, fair to good	76½@	77½
Brewing, No. 1 to choice	82½@	85
Chevalier, No. 1 to choice	—@—	
Chevalier, No. 2	—@—	
Chevalier, poor	—@—	

OATS.

Stocks of this cereal are too light to admit of much activity, and prices are too high for buyers to operate in other than a small way, only, as a rule, to cover most immediate needs, and these proving of very limited proportions. Especially are high grade oats in very scanty supply, and must so continue until new crop puts in an appearance.

White Oats, fancy feed	1 45	@1 50
White, good to choice	1 35	@1 42½
White, poor to fair	1 25	@1 32½
Gray, common to choice	1 30	@1 42½
Milling	1 42½	@1 50
Surprise, good to choice	1 45	@1 52½
Black Russian	1 12½	@1 30
Red	1 30	@1 45

CORN.

While the market is hardly so strong in tone as a week ago, valnes continue at a high range, under decidedly light offerings of both domestic and imported. Not for a long time have supplies been so scanty as during the greater part of the current month.

Large White, good to choice	1 40	@1 50
Large Yellow	1 40	@1 50
Small Yellow	1 55	@1 60
Eastern, in bulk (carload lots)	1 30	@1 35

RYE.

Offerings are more than sufficient for immediate demand and market presents the same easy tone as previously noted.

Good to choice, new	80 @	82½

BUCKWHEAT.

Market is bare of offerings and values for the time being are consequently largely nominal.

Good to choice	1 85	@2 00

BEANS.

Market is ruling quiet, but values for most descriptions are being maintained at much the same high range as for some weeks past, owing to slim supplies. Pinks and Bayos are the only kinds which can be said to incline in favor of buyers, although they may do comparatively better the coming season than some other kinds, as it frequently happens in the bean trade that where any variety is in excessive supply, the majority of producers do not seed it, giving accumulations a chance to clean up, and such reduction in stocks is invariably accompanied by an improvement in prices. All white beans and also Limas remain in scanty supply.

Pea, fair to good, 100 lbs	4 75	@5 00
Small White, good to choice	4 75	@4 90
Lady Washington	4 00	@4 15
Butter	5 00	@6 00
Pinks	1 40	@1 65
Bayos, good to choice	2 25	@2 50
Reds	3 00	@3 25
Red Kidney	4 25	@4 50
Limas, good to choice	6 25	@6 40
Black-eye Beans	2 75	@3 00
Horse Beans	1 25	@1 50
Garbanzos, large	2 00	@2 25
Garbanzos, small	1 25	@1 75

DRIED PEAS.

Scarcely anything doing in this line, demand and offerings at present being both of insignificant proportions.

Green Peas, California	2 65	@2 80
Niles Peas	1 60	@1 75

WOOL.

Movement continues of fair volume, and prospects are favorable for a clean-up during the current season of both new and old wools. Indications are that prices will remain at much the same figures as now ruling. New wool is selling to better advantage than old, showing generally better condition, and is commanding as a rule full current quotations, while old wools in the majority ef instances will not bring much if any more than inside quotations. Both shippers and scourers are operating, but of free wool, desirable for shipment in the grease, there is not much now offering.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarsc to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

There is no evidence of anything doing in a wholesale way, and there is very little jobbing trade. Stocks are of very small proportions. Values remain nominally unchanged. Bids on choice to fancy new te arrive are mainly within range of 10@12c, with growers generally unwilling to contract at figures named.

Good to choice 1900 crop	13½	@16

HAY AND STRAW.

The market is ruling fairly steady for hay, under moderate offerings of both old and new, and demand about sufficient to absorb all that is now coming forward. Indications are that values will continue close to present range for some time to come, if not throughout the season.

Wheat	8 00	@13 00
Wheat and Oat	8 00	@11 50
Oat	7 00	@10 50
Barley	6 00	@ 8 00
Volunteer	6 00	@ 8 00
Alfalfa	7 00	@ 9 00
Stock	5 00	@ 7 00
Compressed	8 00	@12 00
Straw, ₱ bale	40@	47½

MILLSTUFFS.

Bran was in light supply, and being mostly in few hands, prices were marked up 50c. per ton. That the market will long remain firm at current figures, however, is not probable. Middlings and Shorts remained quotably about as last noted, but demand was not active for either sort, otherwise firmer prices might have ruled, as stocks were of small volume. Rolled Barley tended in favor of buyers. Milled Corn was offered sparingly, owing to scarcity of the whole grain.

Bran, ₱ ton	17 00	@18 00
Middlings	17 50	@20 00
Shorts, Oregon	17 00	@18 00
Barley, Rolled	17 50	@18 00
Cornmeal	28 00	@——
Cracked Corn	29 00	@——

SEEDS.

Market is very quiet at nominally unchanged rates, and is likely to so remain for several months or until new crop comes upon the market. There is very little seed of any sort now offering.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag statistician is publishing figures to show a shortage of five to ten million bags in this year's Pacific Coast supply. He bobs up nearly every season about this time, and he invariably figures out a shortage, despite the fact that it has been the rare exception during the last twenty years when large quantities of bags have not remained on hand at close of the season. All sorts of things can be proven by "figgers," when they are fixed for the purpose. The bag market is firm at the quotations and prices may be crowded higher, but it is safe to assume that Grain Bags will be obtainable in August and September, when the season will be practically ended, and lower figures will probably be current then than are ruling now.

Calcutta Grain Bags, buyer June-July	7¼@—	
Calcutta Grain Bags, spot	7¼@—	
San Francisco Grain Bags, 22x36, spot	7½@—	
State Prison Bags in lots of 2000, ₱ 100.5	65 @—	
Wool Sacks, 4 lbs	32½	@35
Wool Sacks, 3½ lbs	30	@32½
Fleece Twine	7½@—	
Gunnies	—@12½	
Bean Bags	4¾@ 5¼	
Fruit Sacks, cotton	6½@ 7¼	

HIDES, PELTS AND TALLOW.

Conditions have not changed to any material degree in the Hide and Pelt market since last review. Current values are being fairly well maintained. Tallow is meeting with tolerably prompt custom at figures quoted.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½@10	8 @8½
Medium Steers, 48 to 56 lbs	8½@ 9	7 @7½
Light Steers, under 48 lbs	8 @ 8½	6½@7
Heavy Cow Hides, over 50 lbs	8½@ 9	7 @7½
Light Cow Hides, under 50 lbs	8 @ 8½	6½@7
Wet Salted Kip	9 @ 9½	7 @7½
Wet Salted Veal	9½@10	7½@8
Wet Salted Calf	10 @—	9 @—
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	80	@1 00
Pelts, medium, ₱ skin	60	@ 75
Pelts, short wool, ₱ skin	30	@ 55
Pelts, shearling, ₱ skin	10	@ 30
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3	@ 3¼
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Market presents a weak tone, with dealers, large and small, holding off as much as possible, in anticipation of liberal offerings from producing sections at an early day. There is not much new honey now here, either Comb or Extracted. For some very choice White Comb 13c. is asked. New Amber Extracted has been placed at 4c., which is the utmost figure obtainable in a wholesale way in the local market for this grade.

Extracted, White Liquid	5	@ 6
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3½	@ 4
White Comb, 1 lb frames	11½	@12½
Amber Comb	9	@10
Dark Comb	6	@ 8

BEESWAX.

There is not enough offering to admit of any very extensive business. The few transfers effected are at generally unchanged rates.

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

The quiet condition of the Beef market is perhaps a little more pronounced than during preceding week, but values have remained practically unchanged. Mutton was in moderate request at last quoted figures, with the supply ample for the demand. Lamb commanded steady rates. Veal brought fully as good average prices as fer some weeks preceding. Hogs were in tolerably free receipt, both domestic and Eastern, and market inclined against sellers.

Beef, first quality, dressed, net ₱ lb	7½	@—
Beef, second quality	7	@—
Beef, third quality	6½	@ 7
Mutton—ewes, 6½@7½c; wethers	7	@ 8
Hogs, hard grain fed, medium	6¼	@—
Hogs, small, fat	6¼	@—
Hogs, large hard	5¾	@ 6
Hogs, feeders	—	@—
Hogs, country dressed	7½	@ 7¾
Veal, small, ₱ lb	8	@ 9½
Veal, large, ₱ lb	7½	@ 8½
Lamb, spring, ₱ lb	8½	@—

POULTRY.

Most kinds of poultry have been most of the week in heavier supply than the demand warranted, the excess being mainly due to increased arrivals of Eastern. For the ordinary run of offerings the market was decidedly weak. Common old fowls and small young were most in evidence. Large and fat Young Chickens sold fairly well, but not at as geod average prices as preceding week. Ducks and Geese went at reduced rates. Turkeys met with scarcely any attention. Fer the past day or two the market for Chickens has shown a little better tone.

Turkeys, live hens, ₱ lb	11	@ 12
Turkeys, live gobblers, ₱ lb	9	@ 10
Hens, California, ₱ dozen	4 00	@5 00
Roosters, old	4 00	@4 25
Roosters, young (full-grown)	6 50	@7 50
Fryers	4 00	@5 00
Broilers, large	3 50	@4 00
Broilers, small	2 00	@2 50
Ducks, old, ₱ dozen	3 50	@4 50
Ducks, young, ₱ dozen	5 00	@6 00
Geese, ₱ pair	1 25	@1 50
Goslings, ₱ pair	1 50	@2 00
Pigeons, old, ₱ dozen	1 25	@1 50
Pigeons, young	1 25	@1 50

BUTTER.

While demand is not particularly brisk it is sufficient to absorb the bulk of offerings, there being no accumulations of consequence of desirable stock of either creamery or dairy product. Values ru steady. Materially lower prices are no now looked for this season.

Creamery, extras, ₱ lb	17	@17
Creamery, firsts	16	@16
Creamery, seconds	—	@—
Dairy, select	16	@16
Dairy, firsts	15½	@16
Dairy, seconds	—	@—
Dairy, soft and weedy	—	@—
Mixed store	12½	@1
Creamery in tubs	17	@
Pickled Roll	—	@—

Firkin, California, choice to select	16	@17
Firkin, common to fair	14	@15

CHEESE.

Domestic flats are in more than ample supply for immediate demand, and receivers are as a rule anxious to realize, causing market to present a weak tone. Values for small cheese are being fairly well maintained.

California, fancy flat, new	8½	@—
California, good to choice	8	@ 8½
California, fair to good	7½	@ 8
California Cheddar	—	@—
California, "Young Americas"	9½	@10

EGGS.

Arrivals and offerings of strictly choice to select domestic fresh, uniformly large and white eggs, were not particularly heavy or excessive, and for stock of this sort prices were tolerably well maintained at same level as preceding week, but of the more common grades there was a surfeit, latter meeting with a weak market. Eastern seconds were offered at 11½ @14c., as to quality and condition. Eastern firsts are going into cold storage.

California, select, large, white and fresh	15	@16
California, select, irregular color & size	14	@14½
California, good to choice store	12½	@13½

VEGETABLES.

Arrivals of most kinds of vegetables now in season were of liberal proportions, none showing decreased receipt, and some being in heavier supply than preceding week. Noteworthy as showing increase were Tomatoes, there being free arrivals of this vegetable from Los Angeles. Prices were in the main favorable to consumers. Such changes as were made in quotations were almost without exception to easier rates. The Onion market, however, could not be said to be weak for either new or old. New Red Onions were bringing higher prices in Stockton than were quoted by most dealers here.

Asparagus, ℔ box	50	@1 50
Beans, String, ℔ lb	3	@ 5
Beans, Wax, ℔ lb	4	@ 5
Cabbage, choice garden, ℔ 100 lbs	65	@ 75
Cauliflower, ℔ dozen	50	@ —
Cucumbers, ℔ box	1 50	@2 00
Egg Plant, ℔ lb	10	@ 15
Garlic, ℔ lb	4	@ 6
Onions, Yellow Danver, ℔ cental	3 50	@4 00
Onions, Australian, ℔ cental	4 50	@4 75
Onions, New Cal. Red, ℔ cental	80	@1 00
Peas, Sweet garden, ℔ lb	2	@ 2½
Peas, good to choice, ℔ sack	1 00	@1 25
Peppers, Green Chile, ℔ lb	6	@ 8
Rhubarb, ℔ box	40	@ 65
Rhubarb, Mammoth, ℔ box	75	@ 90
Squash Summer, ℔ box	1 00	@1 25
Tomatoes, ℔ box	50	@1 25

POTATOES.

There were fairly liberal receipts of Burbank Seedlings from Oregon for this late date, but there were few old potatoes on market from any other quarter. Values for old remained quotably about as last noted, but market was not particularly firm, owing to the quality, as is to be expected at this time of year, averaging poor. New potatoes were favored with a good demand and a firm market, bringing better average prices than preceding week.

Burbanks, River, ℔ cental	85	@1 25
Burbanks, Petaluma-Tomales, ℔ ctl.	1 00	@1 30
Burbanks, Oregon, lb cental	1 30	@1 65
New Potatoes, ℔ cental	1 60	@2 15

The Fruit Market.

FRESH FRUITS.

There were fair receipts of early summer fruits, Cherries taking the lead and selling at a wide range, as low as 25c per box for very common white and red, and up to $1 for fancy black and choice Royal Anne, although during greater part of the week the higher figure above named was hardly warranted as a quotation for Black. The first Peaches of the season arrived from Vacaville—Hale's Early and Alexander—and were offered at $1.50@1.75 per box, but they were not ripe. Apricots are not arriving very freely; a few Royals and Seedlings have been received and brought good prices where they were sufficiently ripe to be desirable. Green Apples have put in an appearance, but they were in the main of very ordinary quality and did not meet with noteworthy competition from buyers. The Eastern Ben Davis Apples are now offering at $2@2.25 per box, and are moving slowly. Berries of most kinds in season were in increased receipt, and in consequence easier prices were current.

Apples, green, ℔ box	40@	65
Apricots, Pringle, ℔ box	75@	1 00
Apricots, seedlings, ℔ box	1 00@	1 25
Blackberries, ℔ crate	1 50@	——
Cherries, Black, ℔ box	50@	75
Cherries, Royal Anne, ℔ box	85@	1 00
Cherries, Royal Anne, ℔ lb	9@	10
Cherries, Black, ℔ lb	4@	6
Cherries, White, ℔ box	30@	60
Cherries, common White and Red, ℔ lb	2@	3
Currants, ℔ drawer	40@	50
Gooseberries, common, ℔ lb	2½@	3½
Raspberries, ℔ crate	1 25@	1 50
Strawberries, Longworth, ℔ chest	6 00@	9 00
Strawberries, Large, ℔ chest	4 00@	6 00

DRIED FRUITS.

In the market for cured and evaporated fruits there is very little business to record, handlers of these goods reporting without exception an exceedingly quiet state of trade. When it comes to choice deciduous fruit, there is, however, aside from Prunes, very little offering. Apples and Apricots, choice or otherwise, are in scanty supply, and market for these two kinds is firm at the quotations, especially firm, or we might say strong, for strictly choice stock. Those who are fortunate enough to have any good quality Apricots are more disposed to hold than to realize, believing that the coming season will show a decidedly firmer market for this fruit than now exists. New Apricots will certainly be in much lighter supply than last season, and that good to choice old will meet with custom at comparatively stiff prices is altogether probable. There are very few choice Peaches and virtually no choice Pears, but fairly liberal quantities of common qualities of both. Plums are in fair supply, but offerings are largely of ordinary grade. It is not likely that much dried fruit other than Prunes will be carried into the new season. While quotations are nominally the same as last noted, choice qualities of most descriptions, and especially of Apricots and Pears, are salable at higher prices and are not obtainable in wholesale quantity at any figure. Prunes are going at much the same irregular values as for some weeks past, mainly on a 2¼@2½c basis for the four sizes, and are not selling in very extensive fashion at these prices, although present crop prospects make Prunes appear a decided bargain at current figures and likely to rule materially firmer.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6	@ 6½
Apricots, Royal, choice, in sacks, ℔ lb	7	@ 7½
Apricots, Royal, fancy	—@—	
Apricots, Moorpark	9	@10
Apples, in 50-lb boxes, rings, pressed, fancy	5	@ 6
Apples, 50-lb boxes, rings, pressed, good to choice	3½@	4½
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5½@	6
Peaches, unpeeled, choice	4	@ 4½
Peaches, peeled, in boxes	11	@14
Pears, unpeeled Bartletts, halved, fancy	5	@ 6
Pears, halved, unpeeled Bartletts	3	@ 4
Pears, quartered, unpeeled Bartletts	3	@ 4
Plums, Black, pitted	4	@ 5
Plums, White and Red	5	@ 6
Prunes, Silver	4½@	6

COMMON SUN-DRIED.

Apricots	4	@ 5
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	2	@ 3
Figs, White	2½@	3½
Peaches, unpeeled	3	@ 5
Pears, prime halves	2	@ 3

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

The raisin market continues quiet. There is a moderate movement in seeded in 1-lb. cartons at the special rate of 5¼c, but the 200 carloads set aside to be sold at above figure for advertising purposes have been nearly all disposed of. In the official quotations of the Raisin Growers' Association no changes are announced.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—

(Usual advance for fractions.)

Loose Muscatel, 4-crown standard, ℔ lb	—@	7
Loose Muscatel, 3-crown	—@	6½
Loose Muscatel, 2-crown standard	—@	6
Loose Muscatel, seedless	—@	6½

(Above prices for loose raisins are for 50-lb boxes.)

Seeded Raisins, 1-lb packages, ℔ lb	5¼@	—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUIT.

Oranges are now moving slowly, deciduous and berry fruit receiving more attention. For strictly choice the market was fairly steady at quotably unchanged values, but for the more common qualities the situation inclined against sellers. Lemons were held at practically same figures as last quoted, but demand was of a light order. Limes were in good supply and cheap.

Oranges—Navel, ℔ box	1 00@	2 50
Seedlings, ℔ box	50@	1 25
Valencias, ℔ box	1 50@	2 35
Grape Fruit, ℔ box	75@	1 50
Lemons—California, select, ℔ box	2 00@	2 25
California, good to choice	1 50@	1 75
California, common to fair	75@	1 25
Limes—Mexican, ℔ box	4 00@	4 50

NUTS.

There is virtually nothing doing in Almonds or Walnuts. The latter are in too light supply to be quoted in a regular way. The Almond crop abroad, as well as in this State, promises to be light. Indications are that the California Walnut crop will be larger and of better quality than last season. Peanuts are commanding steady rates, with no heavy offerings of either domestic or imported.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@14
California Almonds, soft shell	10	@12
California Almonds, hard shell	6	@ 7
Peanuts, California, fair to prime	4½@	5½
Peanuts, Eastern, hand-picked	5½@	6
Pine Nuts	5	@ 6

WINE.

The market remains firm, with a fair movement from second hands of blended wines, both for shipment and on local account. In last year's wines there is practically nothing doing in a wholesale way, growers having in most instances closed out their holdings. Quotable rates for last year's dry wines remain nominally at 22@25c. per gallon. The Panama steamer sailing Monday carried 1,342 gallons and 60 cases for Central America, and 136 gallons and 10 cases for Mexico.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	165,657	5,906,927	5,774,488
Wheat, centals	302,615	7,444,295	6,207,710
Barley, centals	37,064	3,481,462	4,882,168
Oats, centals	3,655	596,770	739,079
Corn, centals	1,975	104,290	135,166
Rye, centals	263	112,305	97,867
Beans, sacks	2,625	539,031	356,186
Potatoes, sacks	20,553	1,435,435	1,151,602
Onions, sacks	3,748	166,054	153,128
Hay, tons	2,662	148,358	142,721
Wool, bales	1,460	50,675	51,537
Hops, bales	...	8,234	10,273

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	78,924	3,436,384	3,840,802
Wheat, centals	236,125	7,053,853	5,547,944
Barley, centals	50	1,954,689	3,791,567
Oats, centals	...	49,101	43,946
Corn, centals	...	3,538	18,388
Beans, sacks	42	13,399	25,585
Hay, bales	10	85,969	130,874
Wool, pounds	13,073	1 044,291	4,324,433
Hops, pounds	585	561,405	1,055,886
Honey, cases	42	1,851	3,577
Potatoes, pack's	233	129,673	70,799

California Dried Fruit at New York.

NEW YORK, May 22.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Trade of a light order, and no special changes in prices.

Prunes, 3¼@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½@20c.

The Paint for wineries and wine tanks

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In preparing my cellar for the vintage, I find your P & B Paint an indespensible requisite; used about the distillery wash tanks and the fermenting tanks—even for wine-fermenting tanks. It is the only article I know of which can be used without danger of contaminating the wine or brandy. No paint with tar in its composition would answer in such a place, but this is in no wise affected by contact with the fermenting must or wash. The floor of my fermenting rooms are kept tight and sweet by an annual coat, and I have even applied it to tanks suffering from exposure to the sun and weather. These never required a second coat, but remained tight as if covered with a shed.

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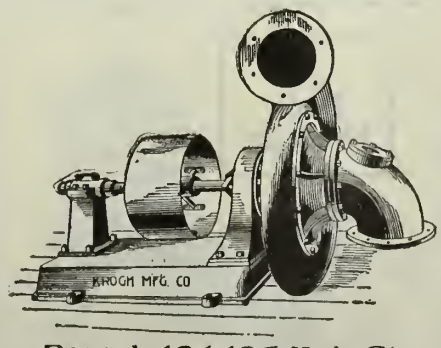

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THE STOCK YARD.

Estray Law Now in Force.

The last Legislature passed a new law relating to estrays and the enactment is now in force. It provides for taking up estrays and gives a lien on such stock for all damages, costs and expenses incurred by reason of taking up the trespassing animals, and repeals all other Acts relating to estrays. Following is the new law in full:

SECTION 1. Any person finding at any time any estray domestic animal or animals upon his premises, or upon premises to which he has the right of possession, or upon highways adjacent thereto, may take up the same and have a lien thereon for all expenses incurred and costs in keeping and caring for said animal or animals, as hereinafter provided; and no person shall remove them from the possession of the taker-up, or from the possession of the officer to whom they may have been delivered, except as hereinafter provided.

SEC. 2. Any person taking up an estray animal or animals shall confine the same in a secure place, and within five days file with the county recorder of the county in which such estray is found a notice containing a description of the animal or animals taken up, with the marks and brands, if they have any, together with the probable value of each animal, and a statement of the place where the take-up was found, and where he has confined the same. The county recorder shall receive for filing said notice the sum of 50 cents.

SEC. 3. At any time within thirty days from the date of the filing of the notice specified in Sec. 2 of this Act any person claiming such estray animal or animals shall appear and demand from the taker-up the possession thereof, and shall, at the same time, pay to the taker-up all damages, expenses and costs incurred by reason of taking up such animal or animals, and upon receiving such damages, expenses and costs the taker-up shall immediately deliver to the party claiming such animal or animals the possession thereof. Such damages, expenses and costs shall be estimated as follows, to-wit:

1. The total amount paid by the taker-up to the county recorder.
2. The sum of 15 cents per day for the keeping and care of each horse, mule, jenny, ass, cow, bull, ox, steer or calf.
3. The sum of 5 cents per day for the keeping and care of each sheep, goat, hog, or other animal not hereinbefore specified, provided that the taker-up of said animal or animals must properly feed and water the same while under his care, and if he fail so to do shall forfeit all right of lien thereon.

SEC. 4. If the party claiming such estray animal or animals is dissatisfied with the amount charged by the taker-up for costs and expenses, he shall render to the taker-up the proper amount therefor, and if the said tender be refused, the party claiming such estray animal or animals shall within ten days thereafter commence, in the proper court, suit against the taker-up for the recovery of the possession of such estray animal or animals, in which said action the taker-up may set forth his expenses and costs and said matter together with the accruing expenses and costs to the time of the entry of the judgment, shall be determined by the court in accordance with the provisions of this Act, and the amount of all such expenses and costs, and the costs of such action shall be included in any judgment awarded by said court, and such costs in said action shall be in favor of the plaintiff in said action and against said defendant, if the court shall find that the amount tendered by the plaintiff to the defendant was not less than the proper amount; otherwise said costs shall be in favor of the defendant and against the plaintiff. Without the consent of defendant in any such action, a return of such animal or animals shall be adjudged until the plaintiff shall pay to defendant or deposit in court payable to him, the amount of all such expenses and costs in said action; and in case such payment or deposit be not made within ten days after the same shall have been determined by the court, or said action be not prosecuted with diligence, then the said action may be dismissed on motion of defendant without notice; in case of such dismissal, the defendant shall have judgment for his costs. In any such action for plaintiff to recover, it shall be incumbent on him to establish an existing right in himself to the possession of such animal or animals.

SEC. 5. If no person appears and claims the animal or animals taken up within thirty days after the filing of the notice hereinbefore mentioned in Sec. 3 of this Act; or if a person does appear and claim the animal or animals within thirty days after the filing of the notice above referred to but shall fail to pay the taker-up the expenses and costs as provided in Sec. 3 of this Act, and shall fail to commence and prosecute with diligence an action for the recovery of the possession of such estray animal or animals within the time required by Sec. 4 of this Act; or if said action shall be dismissed; then the taker-up shall, in writing, notify a constable, or other officer of the township or county in which said animal or animals are held, which notice shall specify that he has complied with all the provisions of this Act, and that a claimant of said animal or animals has failed to appear and claim the same as herein provided, or that if he has appeared that he has failed to pay the expenses and costs and has failed to commence or prosecute with diligence an action for the recovery of the possession of such animal or animals within the time and in the manner provided for in this Act, or that said action has been dismissed, and that such animal or animals are held by him subject to sale. Said constable, or officer, shall immediately proceed to sell such animal or animals at public sale, in conformity with the law concerning sales on execution, and shall be entitled to the same fees as are provided by law for sales under execution.

SEC. 6. Out of the money realized from the sale of estrays, the constable or other officer shall first retain his fees; he shall then pay the taker-up his expenses and costs as provided in Sec. 3 of this Act, or so much thereof as the funds in his hands will permit, and the surplus, if any, he shall pay to the county treasurer, to be held by him for the owner of the estray or estrays for which it was received in payment. If any person or persons shall, within one year thereafter, prove to the satisfaction of the board of supervisors of the county in which the estray or estrays were sold that he or they are entitled to the sum so held by the county treasurer, or any part thereof, the said board of supervisors shall order such sum to be paid over to the person or persons; and if not so proven within one year, then the same shall become a part of the common school fund of said county.

SEC. 7. All sales made by any constable or other officer, under the provisions of this Act, shall convey a good and valid title to the purchaser, and the owner of the estray or estrays so sold shall thereafter be barred from all right to recover the same.

SEC. 8. The taker-up of an estray animal or animals shall use reasonable care to preserve the same from injury, but if an estray animal or animals die or escape from the possession of the taker-up at any time while he is holding the same under the provisions of this act, the taker-up shall not be held liable in any manner on account of such animal or animals.

SEC. 9. Nothing in this Act shall affect the laws or regulations in force or which may be in force regarding estrays, the poundkeeper or other pound officer within the limits of any city or town where laws regarding estrays are in force.

SEC. 10. All other Acts and parts of Acts relating to estrays, now in force, are hereby repealed.

SEC. 11. This Act shall take effect from and after its passage.

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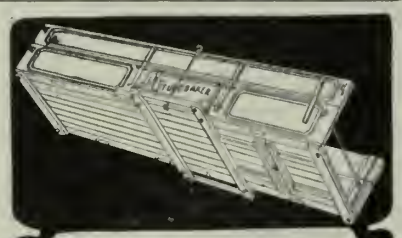

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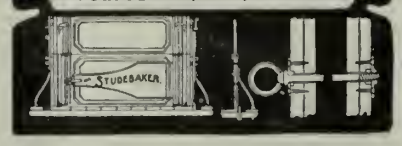

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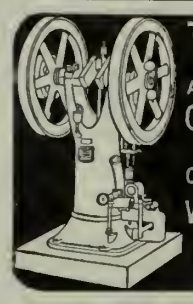

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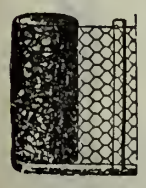
RIFE ENGINE COMPANY, 128 Liberty St., NEW YORK.



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Bet. California and Pine, SAN FRANCISCO, CAL.

THE IRRIGATOR.

A California Inquiry.

Prof. Albert E. Chandler of the University of California has recently made a study of the storage possibilities of the Cache Creek Basin, Cal., which is now in press and will soon be issued by the United States Geological Survey in its series of "Water Supply and Irrigation" papers. The Cache Creek Basin, which lies some 75 miles north of the city of San Francisco, contains one of California's most attractive inland water bodies—Clear lake—lying more than 1300 feet above tide water, in the heart of the picturesque Coast Range. The peaks of these mountains north of the lake rise to an elevation of 6000 feet; their slopes are precipitous and densely clad with magnificent forests. From this lake as a source, Cache creek traverses a succession of canyons and open regions until it merges into the broad Sacramento valley. Although not of great length, the stream and its tributaries offer a variety of problems of interest to the agriculturist, the stock raiser and the engineer, and an added interest is also found in the fact that the city of San Francisco is contemplating the use of Clear lake to augment its water supply.

Irrigation has been practiced nearly thirty years from the waters of Cache creek, and a number of canals and ditches mark the seat of these operations, some of which are quite extensive. These are in many instances still in operation, though in some cases their usefulness is impaired by faulty construction and unfortunate litigation over water rights. Capay valley is one of the most important of these sections. "It is," says Prof. Chandler, "hemmed in on all sides by hills, to the shelter of which is due its remarkable productiveness. Once known merely as a rich wheat-raising district, it is fast becoming famous for its early fruits."

Beside the irrigation canals, the report mentions several pumping plants used in the local farming operations, to supplement the irrigating ditches; one of these, an interesting departure from former methods, is an 18 H. P. gasoline engine and pump, both mounted on a wagon and moved from farm to farm, as necessity requires. A number of possible reservoir sites are also described, with the storage capacity of their confined basins, and a careful discussion of Clear lake as a source of water supply for San Francisco closes the volume.

Saved His Blackberries.

To THE EDITOR:—I have your esteemed favor of the 7th inst. and beg you to accept my thanks for your timely information on the blackberry rust. I did not expect you to answer by letter, but your doing so has saved a goodly portion of my berries. I am less than two years in California; and coming as I did from manufacturing cooperage stock to ranching, I find I have a good deal to learn, and prize highly the PACIFIC RURAL PRESS for practical hints gotten therefrom. In fact, my wife jokingly calls it my bible.

Fowler, Fresno Co. M. PETTIT.

Publishers of the "Pacific Coast Poulterers' Hand-Book and Guide." PRICE 40c.

Manufacturers of Pacific Incubator and Brooder, Send for Catalogue.

OAKLAND POULTRY YARDS, 1317 Castro St. Oakland, Cal.

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is still in the lead. Reports from the THREE GREAT FAIRS of the Pacific coast show that after meeting the best herds in California, Oregon and Washington, we can rightfully claim to have the **Champion Herd** of the coast. Look at the record: California State Fair, 15 ribbons; Oregon State Fair, 18 ribbons; San Francisco and San Mateo Fair, 20 ribbons, making a total of 53 ribbons. Our large sales to visitors to the fairs show what they thought of the stock, and we have very few salable pigs left. If you are in need of stock, write us and we will describe what we have.

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N. OHLANDT & CO., Indiana and Yolo Sts., San Francisco. (*Successors to Emery Fertilizer Co.*)

The Hazeltine Moth Catcher.

California has suffered to some extent from the misrepresentations of a manufacturer whose operations are described by George C. Butz in a bulletin of the Pennsylvania Experiment Station as follows:

The Pennsylvania Experiment Station deems it advisable to call the attention of the fruit growers of Pennsylvania to the fact that circulars of a trap lantern called the "Hazeltine Moth Catcher" have been received in many places. These circulars claim that this moth catcher will entrap not only moths, but also beetles, weevils and almost any form of insect. A claim so broad and unreasonable will condemn the apparatus in most minds, but some of our fruit growers and farmers may be misled into a purchase of this moth catcher because, as the circulars state, it is "endorsed by Prof. Stedman of the Missouri Agricultural College." In justice to Prof. Stedman we are authorized to publish the following statement from him in a letter dated April 20, 1901:

"I am receiving hundreds of letters from your State (Pennsylvania) in regard to a trap lantern made in this State (Missouri) by a Mr. S. A. Hazeltine and is called the Hazeltine moth catcher. About a year ago I tested this trap and endorsed it for the corn or bollworm moth only. He then issued circulars advertising this trap and inserted my letter all right. But he finally became bolder and bolder and commenced to cut out parts of my letter, especially the part restricting it to the corn or bollworm moth, until he finally in later circulars made it appear as though I endorsed the trap for all the insects he mentioned. He finally issued circulars stating that the trap will catch the codlin moth, 'the insect that stings the fruit, borers, plum curculio, potato beetles, tomato worm moth,' etc., and just below this absurd list states that it is 'endorsed by Prof. Stedman of the Missouri Agricultural College,' omitting my letter entirely and making it appear that I endorse the trap for the entire list of absurdities, which is false, unjust, misleading and deceptive."

Perpetual Motion.

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Patrons of Husbandry.

Giant Oak Grange.

To THE EDITOR:—This Grange held its regular semi-monthly meeting on Saturday, the 11th, at its hall in Farmersville. Giant Oak Grange is the baby Grange at present. It owns its own hall, originally built by the members of Deep Creek Grange No. 136. Deep Creek Grange was organized by J. W. A. Wright, who wrote the declaration of purposes of the Order of Patrons of Husbandry on December 13, 1873, W. G. Pennabaker, Master, F. G. Jefferds, Secretary, and a charter membership of thirty-one. The writer had the pleasure of meeting, at the Grange on the 11th, one of the charter members of Deep Dreek Grange, Mrs. L. Mathewson, widow of the late A. W. Mathewson, also a charter member of Deep Creek Grange and Past Master of Tulare Grange. The writer was informed at the meeting that G. B. Catron, another charter member of Deep Creek Grange, had that morning passed from this life.

Giant Oak Grange, organized this year with a membership of thirty-five, which exceeds the charter membership of Deep Creek Grange, notwithstanding the great enthusiasm in Grange organization at that time. One very encouraging sign of Giant Oak Grange is the large number of young men and young women in its membership.

There was present at the meeting a delegation from Tulare Grange to arrange with Giant Oak Grange for a joint picnic, which was held at Arboleda Park, about a quarter of a mile south of Giant Oak Grange Hall, on Saturday, the 18th. Arboleda Park is owned by Judge T. J. Brundage, the Farmersville merchant. It has a nice grove of old oaks, with a suitable platform for exercises, good watering and tying facilities for driving animals.

There was an address of welcome by the Worthy Master of Giant Oak Grange, responded to by the Worthy Master of Tulare Grange. Then Miss Anna Bernhard, teacher of Union School, had her school—by previous arrangement with Giant Oak Grange, of which she is the Worthy Overseer, and a bright, capable officer—perform the closing exercises of the school year. The children went through their several parts with much credit to themselves and the teacher, who had, with much painstaking, carefully trained them. The exercises lasted about an hour and were attentively listened to by all present, after which a splendid lunch was had, and, until time to return home, the rest of the day was spent by the older members in conversation and mutual greeting, by the junior members in games.

This holding the school closing exercises at a Grange picnic is a new departure. This much can be said for it, that it was a success, with which Giant Oak Grange may well be pleased.

I cannot close without complimenting the vocal quartet of Tulare Grange on their well-selected songs and their admirable rendition of them. J. T.

Tulare.

Danville Grange.

To THE EDITOR:—In anticipation of N. G. D. Bro. D. M. Winans' visit, the members of Danville Grange assembled at their hall at an early hour and the sisters soon had the tables bountifully spread with good things, so that when the train arrived with our guest all joined in a sociable gathering about the festive board, after which, at 1:30 o'clock, Grange was called to order in regular form. When the usual routine of business was over, Bro. Winans was called upon and gave us a good talk on the progress and benefits of the Grange, urging regularity in attendance; promptness, practice and thoroughness in all the work of the Order; increase in membership, and co-operation in business. He also exemplified the secret work of the Order, after which Bro. C. Wood read an interesting address on "Farming in California."

With a vote of thanks to Bro. Winans for his visit, the Grange joined in singing some Patron's songs and closed the pleasant afternoon's meeting.

S. E. WOOD, Secretary.

Danville.

Children's Day.

To THE EDITOR:—The Worthy Lecturer of the National Grange, speaking of this day, says Children's Day is more generally observed than any other event in the Grange calendar, and has resulted in great good in the past. The date of the observance having been fixed by the Master of the State Grange, by proclamation or otherwise, all the children of the vicinity of a subordinate Grange should be invited to attend and participate in the exercises. This may be held in some convenient grove, or in the Grange or other hall. The children will be the honored guests upon this occasion, and with speech and song contribute to the enjoyment of the day, while the banquet will remain in their memory as the most pleasing exercise of all. Let us make Children's Day of 1901 the brightest and best of all, leaving happy memories with ourselves as well as with the children, who have come to bless and brighten the farm homes of the nation. Efforts made in behalf of Children's Day will come back to us in later years as a bright spot in memory that cannot be effaced, and will cause many happy recollections of younger days.

I therefore appoint Friday, June 7th, as Children's Day. Make it a glad and memorable event.

G. W. WORTHEN,
San Jose. Master Cal. S. G.

Petaluma Grange.

To THE EDITOR:—Since my last writing a Rochdale company has been formed in Petaluma and seven directors elected. We hope to soon have a store opened on the Rochdale plan.

At our regular meeting to-day we held a drill in the work of the first degree, and expect to drill regularly so as to become more proficient in the work. We now have seven applications on the table, with promise of several more.

Plans were formed to-day for holding a picnic in June, hoping thus to get the young people interested in Grange work. A social is given once a month by the Grange, to which only those in sympathy with Grange work are invited. Through the medium of these socials, which are largely attended and much enjoyed, we have gained a number of members.

At the meeting of Sonoma County Pomona Grange in April we were honored by a visit from the Worthy State Master, G. W. Worthen, who gave us a very interesting talk in regard to Grange work. A. E. J.

Petaluma, May 22.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING MAY 7, 1901.

673,591.—COIN CALCULATOR—G. A. Aldrich, S. F.
673,671.—SEPARATOR—J. Anderson, Walla Walla, Wash.
673 752.—MIRROR SUPPORT—Bader & Cartwright, S. F.
673,376.—ELECTRIC SIGNAL—H. R. Bennett, S. F.
673,390.—VEHICLE WHEEL—J. P. Erie, Los Angeles, Cal.
673,768.—CRUSHING ROLL—C. R. Fleming, Black Warrior, Ariz.
673,555.—PRINTING PRESS GRIPPER—V. A. Hancock, S. F.
673,851.—BUTTON SEWING MACHINE—F. T. Leilich, S. F.
673,563—ELECTRIC LAMPS—G B Miller, S. F.
673 447—CURTAIN ROD BRACKET—E. M. Nold, Pasadena, Cal.
673,846.—DECOY DUCK—H. A. Ranert, Portland, Or
673,737.—MORTISING MACHINE—W. J. Smith, Detroit, Or
673 85'.—BALL BEARING—Williams & Mitchell, Spokane, Wash.

Prune Dip.
"Greenbank" Pure 100% Caustic Potash and 98% Powd. Caustic Soda.
T. W. JACKSON & CO.,
Sole Agents, - No. 123 California Street, SAN FRANCISCO, CAL.

Notes on Queries and Answers.

ROSE MILDEW, APHIS AND CARP.

To THE EDITOR:—Let your correspondent, who is troubled with mildew, try dusting with air-slaked lime. The only time that the writer ever tried it the mildew disappeared. Further testimony on the subject is desirable.

The thought that it might dry up the mildew was suggested by learning in southern Italy that air-slaked lime was there considered a sovereign remedy for what is there called the American mildew on the grape vine, a species of perouospora. In the early days of the PACIFIC RURAL PRESS a lady gave in its columns her experience in raising a healthy crop of potatoes when the potato rot, perouospora infestaus, was prevalent. She said that she did it by dusting them several times during their growth with dry wood ashes, another alkaline powder.

BLACK APHIS.—Lately a chrysanthemum that was badly infested with black aphis was given a liberal dose of the air-slacked lime, with most excellent results. Lime is one of the easiest things to obtain and can be applied by means of a sulphur bellows, or in a small way a tin can with perforated cover may be used.

CARP MAY BE IMPROVED. — Some years since Mr. W. Scott Chapman of San Gabriel, Los Angeles county, Cal., told the writer that he had carp in a pond of foul warm water that had soft, ill-flavored flesh that was not fit to eat. He caught some in a trap made of slats, like a turkey crate. These were removed, crate and all, to a pool of clear water, supplied by an artesian well. There they were kept confined for a few weeks, and fed on such food as soaked wheat and bread. When dressed and cooked, the flesh of these carp was found to be firm and of good flavor.

The carp has been a domestic animal in much of Asia for thousands of years, but we read that before being butchered he is fed on boiled chestnuts, rice and the like refining food.

We believe that the monks of Germany also knew that the carp was very much what his owners made him. Then, too, there are various species of carp. Perhaps Californians may find sometime that carp and State Prison birds can be much improved by common sense treatment.

Fulton. C. H. DWINELLE.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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Condition first class; just out of shop after thorough repairing. Boiler good as new and newly covered. Gear cast steel. Engine has run two seasons and is suitable for plowing, harrowing or traction purposes. For further particulars, address H. BRIDGFORD, 39 Stockton St., S. F., Cal.

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Assaying of Ores, $25; Bullion and Chlorination Assay, $25; Blowpipe Assay, $10. Full course of assaying, $50. Established 1864. Send for Circular.

$25 TO $50 A WEEK!

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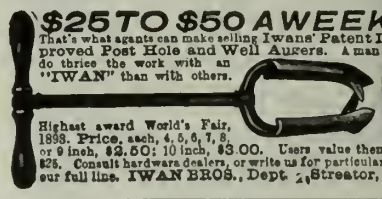

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Ingrain effect. In blue, terra cotta, green and red. Put on with tacks or mouldings; no paste. Covers any rough surface Write for samples and prices.

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CLEANEST SKIMMING, MOST SUBSTANTIAL, SAFEST, EASIEST OPERATED, and MOST DURABLE Separator made.

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If interested write for illustrated catalogues containing hundreds of letters to this effect.

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DEALERS IN GASOLINE ENGINES 1½ & 2½ HORSE POWER.
CENTRIFUGAL-TRIPLEX-IRRIGATING AND POWER PUMPS
HAND AND WIND MILL PUMPS, WIND MILLS, HOSE-IRON PIPE, PIPE FITTINGS, TOOLS, BRASS GOODS ETC.

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THE VETERINARIAN.

Lung Worms in Calves.

In answer to complaints from stockmen in the San Joaquin, Dr. T. E. Twining, the well-known Fresno veterinarian and bacteriologist, prepares for the Valley Farmer an account of the disease caused by worms in the lung passages of calves as follows:

This disease, which has either been recently brought into California or has been overlooked and the trouble pronounced some other disease, is now known to exist in several sections of the State: in Los Angeles county, in the vicinity of Clearwater, and around Ferndale, in Humboldt county, from which place it was brought to Fresno county.

A prominent Los Angeles veterinarian stated that he believed the trouble to have existed in that section for years, but was pronounced distemper, no one having taken the trouble to make a post mortem until recently, when the true cause was found. As found in Fresno county, the disease is very fatal, having killed nearly 400 head of calves out of a herd of 550 in eight weeks.

CAUSE.—While there are eight species of strongyli, which live in the air passages of domestic animals (three kinds having been found in the lungs of calves), that producing the disease in Fresno county calves has been recognized as the strongylus micrurus, a nematoid or hair-like worm, from ½ to 3 inches in length. The female is longer than the male. It is believed that the embryos directly thrown out by the females into the bronchi of their host do not develop there, but must be expelled from the animal in order to pass the first stages of their existence. They will live in water for some months and it has been stated the embryo, in a certain stage, will become revivified on being placed in water after having been dried a year or more.

Many theories have been given to account for the manner in which the worm enters the bronchi, but none are satisfactory. It is very probable, however, that the embryos enter the body with water or along with the grass of damp pastures.

SYMPTOMS.—When the worms are not very numerous the symptoms are infrequent and slight cough, which gradually grows stronger and husky, ending in paroxysms and suffocation. The coughing expels from the mouth or nasal cavities mucus sometimes streaked with blood and containing worms and embryos. Should the disease progress slowly, the symptoms are milder, but the animal rapidly emaciates, owing to disorded nutrition, loss of appetite, etc. The symptoms and appearances have often been mistaken for contagious pluro-pneumonia, but the presence of the worms and embryos in the expectoration is the criterion of the disease.

TREATMENT.—Owing to the hardiness of the worm, the various kinds of treatment used have availed but little. Internal treatment, inhalations and intracheal injections have been used, the inhalations appearing to do the most good, and when combined with internal treatment (tonics) appears to be of much benefit, and hopes are entertained of making some cures. Intertracheal injections of either chloroform, turpentine and carbolic acid, or oil of amber, appear to do some good, but where any of the fluids got into tissues it caused considerable swelling and abscess to follow. The inhalations appearing to give the best results were mixtures of chloroform, or ether and oils of turpentine and amber, equal parts, also a little formaldehyde. From one to two teaspoonfuls of this mixture was poured into the nostrils (the head being elevated) and allowed to vaporize. Any bitter, stimulating tonic may be given, which arouses the digestive functions and aids the animal to reach a period of elimination of the parasites.

Owing to the unsatisfactory results to be obtained from any treatment it is of obvious importance to prevent the spread of the disease as much as possible. Our ignorance of the life history of the parasite renders any prophylactic measures rather uncertain, recognizing, however, the utility of drying and draining damp pastures, and the destruction of the lungs of the animals killed by the malady. Until more is known about the worm and its manner of entering the beast we cannot expect to cure the diseased animals, nor prevent young animals from contracting the disease when placed in infected pastures.

Answers by Dr. Creely.

TO REMOVE A FOXTAIL.

TO THE EDITOR:—Will you please tell me through the columns of your valuable paper how to cure a dog of mine which has got a foxtail in its ear? Also a way to kill out Bermuda grass?—SUBSCRIBER.

Irrigate the ear with one pint daily of a 2% solution of lysol and warm water; dry thoroughly, after which place powdered boric acid in the ear, forcing down as far as possible with the finger; dress daily. Report in ten days.

[We do not know how to get rid of Bermuda grass.—ED.]

FOR SWEENEY.

TO THE EDITOR:—Will you please inform me through the veterinary department the treatment for a sweeney.—C. W. BROWN, Semitropic.

The surest and best treatment would be two long setons 1½ feet long to be left in eight days.

AN ABSCESS.

TO THE EDITOR:—I have a setter dog that has a round lump about the size of a small hen's egg just on the side of the tail, on the bone where he sits upon it. It is soft, but doesn't break or appear to go away. It is like a shoe boil on a horse's elbow. I don't know whether to open it or not, and would like Dr. Creely's advice. —F. L. WILSON, Olema.

It is an abscess similar to a shoe boil. Open freely and fill the sac with cotton, on which has been dusted iodoform. Dress daily. It will be several weeks healing. DR. E. J. CREELY.

510 Golden Gate Ave., S. F.

Pumping for Alfalfa.

Mr. Pillsbury of the Tulare Register has been making a study of the possibilities on the Tulare plains, and the following are some of his conclusions about alfalfa growing:

Alfalfa cannot be grown in this country without irrigation, and only a small part of this great valley, not already irrigated, can be irrigated except by pump. Can alfalfa be successfully grown by pump irrigation? That is the crucial question for the dry plains man of Tulare, and we will consider it.

As a result of exhaustive experiments that have been made, it has been demonstrated that ordinary meadow grass absorbs through the roots and gives off into the atmosphere 310 times the weight in water of the dry material that is added to the substance. Alfalfa is certainly as watery, and gives off more moisture than most grasses. The amount of water required to produce a ton of alfalfa has been clearly ascertained; but the writer does not remember the figures, and will therefore have to take meadow grass, for which he has the figures, instead.

A ton of alfalfa hay is pretty green stuff as it goes into the stack, and is probably half water even then; so that if an acre of alfalfa yields two tons of hay to a cutting, we may with reasonable assurance take it that it has yielded one ton of dry substance. If that be the case, at lowest calculations, there has been required in the production of that ton of dry substance 310 of water. The probabilities are that it takes much more than this, for, in a dry country like this, with a drying breeze blowing, vegetation evaporates moisture a good deal faster than in countries where the meadow grasses are grown. In order to open its pores so as to let the oxygen of the air into its cellular construction, a great deal of water is suffered to escape and be wasted, and it is not at all unreasonable to say that it will take 400 tons of water to produce two tons of reasonably well cured alfalfa hay. Then there is the evaporation from the ground, which takes only heaven knows how much.

Now, an acre of rain means 100 tons of water to the acre, and, not allowing anything for evaporation from the ground, it will take 4 inches of rain to mature a crop of alfalfa that will give two tons to the acre, and it is more than likely that it will take 6 inches to do it. If so, alfalfa will require a 6-inch irrigation after each planting to be grown successfully. Provided, always, that the roots of the alfalfa do not reach water from below.

The problem resolves itself down to this: What will it cost to raise, by pump, 600 tons of water from where it is to where it is not, from the depth in the well below which water will not fall when the pump is running to the height of the discharge pipe? We cannot answer that question for anyone, but each one can answer it for himself by intelligently trying. The Register has published a great deal about pumps from first to last, and expects to publish a great deal more as to what people have done with pumps. Much depends on the pumps, but much more on the people. The careless man who so installs his pump that there is friction, slipping of belts and leakage of boiler, pays for it in the fuel. The careful man who installs a good plant carefully may raise the same quantity of water an equal distance for half the money that another will spend.

However, there is one fact tolerably clear: Alfalfa cannot be irrigated to advantage unless the land is either leveled or contour checked so that if 6 inches of water be put on some of the water will reach all of the alfalfa, but every acre made ready for the water is so much property added to the wealth of the owner. Contour checking is probably the best as it is the cheapest method and disturbs the soil least.

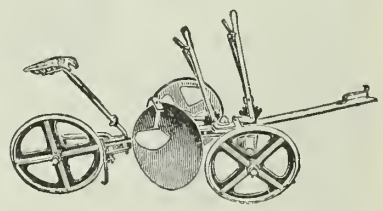
Another thing: You cannot afford to pump for alfalfa if you are going to be too tired to put up hay and are therefore going to pasture it all the year round. That is the way to get the least money out of alfalfa with the least work and at the greatest cost per ton for pumping.

For dairy feed alfalfa wants to be cut just before it blossoms. It makes better feed for cows if cut then than if cut later and you can get another cutting in the year. After you have taken off three cuttings you may let the alfalfa grow until ready to cut and then turn in the stock for a green fall feed, taking the stock off as soon as the winter rains make the ground wet.

With 120 acres of salt grass, thirty-five acres of alfalfa and five acres of corn each, a Tulare county plains man can keep thirty to forty dairy cows, rear the calves to salable age and keep 100 pounds of hogs to the cow.

But he must have his cows come in mostly in the fall or late summer and whether or not it will pay to pump water for alfalfa will depend on the quality of the cows that are kept. The cows a man keeps must be at least half as good as a cow and not eat more than twice as much.

Rotary Disc Plows.



All the plow manufacturers have been making experiments of this style of plow, and this is evidence that they see sufficient merit in the principle of the disc plow to try to determine if they can make the plow so that it will do good work under all conditions. The Benicia Agricultural Works of Benicia, Cal., evidently have struck upon the right model, for they have placed orders to put up over 1000 of these plows for next season. From all accounts, it will be a surprise to other disc plow manufacturers, and many applications for agencies are already being made to the selling agents, Baker & Hamilton, San Francisco, Sacramento, Los Angeles. *

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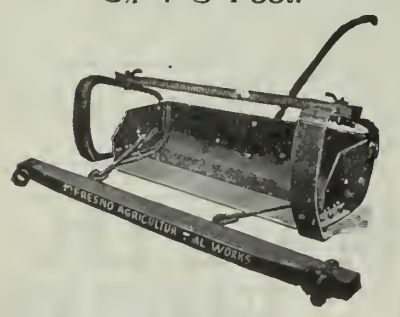

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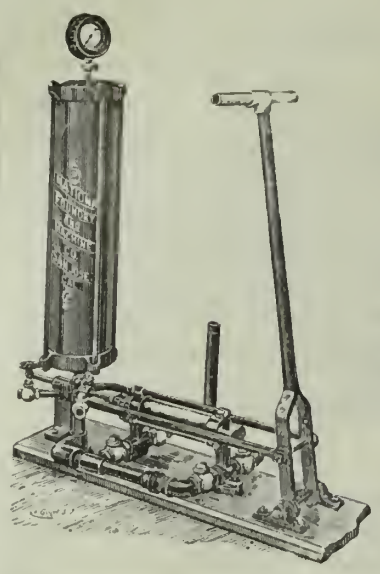

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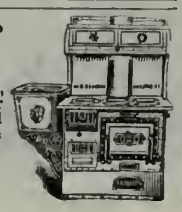

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Vol. LXI. No. 22. SAN FRANCISCO, SATURDAY, JUNE 1, 1901. THIRTIETH YEAR. Office, 330 Market St.

Water as a Dam Builder.

Written for the PACIFIC RURAL PRESS by WM. M. BRISTOL.

The hydraulic dam, so called, is not a new thing. The dam site, the hill or deposit of earth and the stream of water necessary are not, however, often found together; consequently, dams constructed by this method are not of frequent occurrence.

The one shown is on the property of the East Highlands Orange Co., in San Bernardino county, and was not quite finished when the view was taken. It is 65 feet high and nearly 200 feet long at the top. Just to the right of the gulch which it spans, on a mesa 1600 feet above sea level, is a natural basin 8 acres in extent. This mesa—a deposit of compact, reddish, gravelly loam of unknown depth, was evidently formed under water, and the basin seems to have resulted from a change in the course of debris-laden currents. A few years ago the company filled two low places in the rim of the depression, with the intention of using it as a storage reservoir for winter water from Plunge creek.

For a distance of 200 yards the gulch and the reservoir are separated only by a narrow bank of earth; and as the gulch is deeper than the reservoir, it was not surprising that water from the latter leaked into the former, causing landslides which threatened the destruction of the natural partition between them. It was for the purpose of preventing this and strengthening the intervening bank that the dam was constructed, the small reservoir formed by it in the gulch being simply incidental.

The left bank of the gulch at this point was high, rising into a knob-like hill perhaps 20 feet above the level to which the dam was to be carried. In a word, the operation performed consisted in bringing a stream of water in an elevated flume to the top of this hill, and allowing it to wash the hill into the gulch.

The chief problem in this method of moving earth lies in making it stop at the desired place, for the volume of water used is necessarily many times greater than the bulk of the earth moved, and, unless properly handled, it has a way of carrying its load too far. In this instance the debris was checked by a brush dam about 20 feet thick, the water flowing through the brush and down the gulch. This brush dam was carried up gradually, being kept a few feet higher than the deposit behind it. When the work was fairly under way a road was made by which the brush-laden wagons drove down onto the dam to unload, and the amount of brush consumed was almost beyond belief. The cypress hedges and eucalyptus windbreaks, the orange and lemon orchards of the settlement contributed prunings and the mountain-side afforded scrub oak and sagebrush. Cottonwood and willow were mixed in so that they might sprout and form a network of roots which should hold the face of the dam after the other brush had decayed. It was unnecessary to use brush on the upper side of the dam, for that portion of the water which ran into the growing reservoir on the up-gulch side kept it filled and the dead-water checked the debris even better than the brush did on the lower side.

Dam Built by the Hydraulic Method in San Bernardino County.

Shady Retreat in Sunol Glen, Alameda County.

The dam, when finished, will be about 40 feet thick at the top; and Edgemont Road, which, in crossing the gulch, used to wind down and up long grades, will utilize it as a travel-saving cut-off. For the present any storm-water coming down the gulch, in excess of the capacity of the reservoir, will be allowed to flow over and down the brush-covered face just as the water used in construction has done, and when the brush has decayed a wooden waste-way will be provided.

Lifting one's self by the boot-straps is commonly counted an impossible thing; but when water is compelled to build a dam for its own restraint it may be said to have accomplished that very task.

A Glen in the Coast Range.

The smaller picture on this page is representative of many nooks in the California Coast Range of the central and upper parts of the State, which have peculiar charms for people at this season of the year. Though there are many rocky gorges in the Coast Range which in picturesqueness rival the smaller rents in the sides of the Sierra Nevada, there are others, like that the picture shows, which have beauties quite their own and very different from the openings in the greater mountains. They are of more modest mien; they have different vegetation and quieter water courses, usually. They sometimes recall the scenes of the Atlantic coast, while the Sierra scenery makes no suggestion in that direction, so far as our observation goes. They carry more verdure in the early summer, for the coast climate is cooler and moister. They are becoming each year more highly prized as the population of the coast cities increases. The advantages of near-by nooks for outings are very great to the mass of city people who have to plan their expenditures along modest lines, and the result is that the vales and glens within easy reach of the metropolis are becoming resonant of racket as June and July set free the children from the city schools. Sunol Glen, represented by the picture, has of late years become very popular.

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E. J. WICKSON.....Horticultural Editor.

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The Week.

Such rains in May are seldom seen, and it depends upon the speaker's interest as to how nice they are. Some are calling them very bad, and with good reason, for hay and small fruits have suffered badly, and yet some grain has doubtless been made, and much stock is now cropping verdure who would have had very dry feed by this time if May had not proved so wet. On the whole and broadly, the May rains have doubtless saved many from loss and deprivation.

The President and his associates departed quietly on Saturday and will reach Washington by Thursday of this week. The safe finish of the visit was a relief both to hosts and guests.

Spot wheat is unchanged and futures but little better than a week ago. One full cargo of wheat and another chiefly of barley have gone to Europe. Barley is weak and slightly lower, as buyers are holding back. Oats are quietly held as before. Corn is a little lower, but still very high. Beans are unchanged, except horse beans, which are lower. Bran is still firmly held in few hands and other millstuffs are unchanged. Old hay is steady and all desirable hay holds well. Beef and mutton are unchanged and hogs are again lower. Utah and local hogs are plentiful; the farther Eastern receipts are few. Butter is in lighter receipt and demand also; strictly choice is firmly held and has an upward look. Cheese is quiet. Eggs of the best grade are rising a little but others are weak. Not only is the local storage large but surplus Eastern eggs are expected to be dropped here for what they will bring. Fine chickens are firm but other poultry is unchanged. New potatoes fell and have recovered again since our last report; old are doing as well as could be expected, considering quality. Old onions are steady but new reds are cheaper. The orange market is firm for choice. Lemons and limes are still low. Choice cherries still bring stiff prices. Cracked fruit is not conspicuous yet. If the weather holds cool this year's cherries will work off at good values apparently. Peaches are still small and green. Apricots are of fair quality and receipts small; prices are maintained. Strawberries have done better as rains have reduced receipts. Dried fruits are all quiet. Deliveries of prunes even at cut rates are said to be being rejected in some cases. Raisins are quiet. Almonds are steadily held on a good prospect and walnuts will come upon a bare market. Hop growers do not agree with buyer's views and futures are scant. Wool is quiet and steady.

The new definition of a miner's inch, as embodied in a law enacted by the California Legislature last winter, should be generally known. The Act was approved March 23 and went into effect last week, viz., sixty days after its passage. It provides for the repeal of all Acts or parts of Acts inconsistent with its provisions, which are as follows: "The standard miner's inch of water shall be equivalent or equal to 1½ cubic feet of water per second measured through any aperture or orifice." This is an abandonment of the idea of making the hole a measure of the amount of water passing through it, which is theoretically correct, for so many conditions affect the passage of water through a hole that the quantity measured by the hole varies greatly. The new law enforces recourse to measurement of cubic contents in some way which is correct; but the old plan is very convenient on a small scale, and will no doubt be always largely used as something much better than guessing at the amount, which is still a practice of some respectability in irrigation circles.

Prof. Elwood Mead is delivering this month at Harvard University a course of lectures on irrigation. It is surprising at first thought that irrigation should be lectured about near Plymouth Rock, and yet there is ample reason for it and reason why the fact should be interesting in the arid region. According to a statement in the Boston Advertiser, Prof. Mead has expressed his firm belief that irrigation can, and will, as nothing else can, make farming once more profitable in New England, and he gives instances, particularly in connection with the tobacco growing industry in the Connecticut valley, to prove that it pays exceedingly. But what is, however, of greater importance is the recognition of the general value of irrigation, as testified by the same journal in these words: "The subject is fascinating. It is fast ceasing to be in any sense sectional. The fact that it is receiving attention at Harvard is but one among many signs that progressive minds in the East, as well as in the West, are becoming wide awake to its importance. The signs are auspicious." We are glad to see this Eastern acknowledgment. We have been waiting for it for some time, in spite of the narrowness of some Eastern molders of public opinion. Prof. Mead is doing a great thing for the country by leading Eastern people to think widely and deeply on this subject.

The interesting review of the forest possessions of our coast by Prof. J. G. Lemmon, which appears upon another page, will be welcome to readers of the PACIFIC RURAL PRESS who desire pointed information on a subject which is now constantly gaining recognition as of pressing importance. Additional interest will pertain to this communication for the older readers of our journal, because it is a reappearance of Prof. Lemmon to a place which he formerly occupied in our columns with great credit to himself and great interest to the public. He has been continuously at work with his wife, who is an accomplished botanist and artist in studies of our local flora, and they have in Oakland an herbarium which is very rich in collections and botanical literature. Prof. Lemmon has just issued a new edition of his excellent hand and pocket book entitled "West American Cone Bearers," which will be found of great assistance to all tourists and mountain climbers, with botanical turns of mind, in recognizing the conifers they meet. Prof. Lemmon has also in preparation a large treatise on "West American Forest Trees," and Mrs. Lemmon is busy with pen and pencil on "West American Ferns and Where They Grow." This very estimable couple are fully entitled to the honors which are freely awarded by all who know them.

Our dear friends, the Spanish people, are scourging themselves over their own backwardness and American forwardness. Some of them seem to think they must get aboard the train of progress quickly or they will be under the wheels. The United States Consul at Barcelona sends a translation from a Valencia newspaper, which says: "Spanish products are rapidly losing ground, and our wines, our soil, our fruits and vegetables will be condemned to home consumption. California is now supplying the French, English and German markets with fresh fruit and vegetables. The fruits are not offered at lower prices than our own, but they are presented neatly packed and in splendid condition. Californians offer their fruit in the same fine condition in which it is picked from the trees. Their oranges, apples, peaches and pears reach Paris after traversing 6000 miles in more attractive and appetizing condition than ours after a journey of 490 miles. Shall we live to see American oranges competing with ours on the Valencia market itself?" Of course the lamentation is a little overdrawn, for we have not yet attacked Europe with vegetables except in canned form to any extent. Perhaps a little exaggeration is necessary to move the unhasty Spaniard.

Recently we had the announcement that the railways would reduce the minimum weight on a carload of fresh fruit to twelve tons instead of thirteen tons. This was a good point. It is now announced that the Southern Pacific Co. has finally consented to grant the request of the deciduous fruit growers for an expedited train service. After weeks of correspondence with its connections the company has announced that it will endeavor to handle green fruit shipments during the coming season on a schedule of six days to Chicago and nine days to New York, and R. D. Stephens of Sacramento, chairman of the committee on transportation appointed at the last fruit growers' convention, has been formally notified of the fact that he may report it to the growers and shippers. It is announced that the guaranteed time will apply only to trainloads, and in order to avoid delays en route and enable the carriers to make the guaranteed schedule the Southern Pacific has suggested to Chairman Stephens that the growers so route their fruit that cars will not have to be set out of a train at junction points. It is suggested that a proper division of the business between the lines east of Ogden can be accomplished by sending a through train over the Union Pacific one day and over the Rio Grande lines the next, instead of cutting up the trains at Ogden. The same arrangement can apply at junction points farther east. If this arrangement is observed, the Southern Pacific announces, fruit trains leaving Sacramento at midnight will reach Ogden in sixty hours, and the lines east of Ogden will forward it from Ogden to Chicago in eighty-four hours, making a total of 144 hours, or six days. This includes time for inspection of cars at junction points. The lines east of Chicago will not guarantee to handle California fruit on faster time than is accorded other perishable freight, which is handled on a schedule of sixty hours between Chicago and New York. Allowing twelve hours' delay at Chicago, California green fruit will reach New York in exactly nine days from Sacramento. Last year many cars were seventeen and nineteen days in reaching the Atlantic seaboard markets. This concession on the part of the companies interested is an illustration of what can be done by a good convention and a good committee. In both these directions the assembly last December in San Francisco was probably the best California has ever seen.

Even in this late day the old wagon has a chance for its life. There has been recently so much delay in getting fruit from the central part of Alameda county, only about 20 miles from the city, that San Francisco commission merchants proposed to send wagons through the county about San Leandro, Haywards and San Lorenzo to collect the fruit. It is said that the delay has been because of insufficient force of shipping clerks and that the railroad company has responded to a memorial, promising to increase the force of clerks. If money makes the mare go, it is also true sometimes that the old mare makes the railroad go.

The coast side of San Mateo county reports considerable damage to the bean crop by the rains. We hardly see how the bean crop could be hurt, unless the heavy rains may have washed out the young plants on the hillsides of that country. Who will explain the statement?

Under date of April 12, 1901, Consul General Guenther of Frankfort informs the State Department that prominent German Government officials and scientists have decided that the only effective known means of destroying phylloxera on grapes was by the application of bisulphuret of carbon and petroleum.

QUERIES AND REPLIES.

Seems to be Drouth Rather Than Aphis.

To THE EDITOR:—Last year both wheat and barley failed in spots after it had grown to good size and was headed out. The report was that it was caused by grain aphis. This year the same trouble is occurring and patches of barley are dying. I send you samples—roots and all. Please see if the cause is the aphis; also please note that the roots seem moldy. Is there other insect or disease present than the aphis? —GROWER, Solano county.

We find very little aphis present—not enough, surely, to account for the premature ripening of the grain nor for the appearance in the roots. A few aphids are clustered under the sheath near the head, and not enough of them there to do any particular injury. The rains are not favorable for the increase of this insect, so it may have been more abundant during the dry spell than at the present time. Our impression is, however, from the appearance of the roots of the grain, that it has suffered from drouth and that the moisture gave out in the soil too soon after the growth was attained; in such case there must be quick yellowing of the straw and insufficient sap to fill out the heads well. This trouble most frequently occurs on very light soils which do not retain moisture well near the surface. The moldy appearance of the roots is an after-effect and comes on after they have been seriously affected by the drouth. Such looking grain as you send was quite abundant last year in the neighborhood of Stockton, on the islands where the peety soils predominate. It is less frequently seen on the heavy soils of the mainland, and yet in years of exceeding great drouth, like that of '98 and '77, there was just such grain from the clay lands. It seems that the appearance is due to moisture conditions which can only be corrected by the use of irrigation whenever the spring rains are too little to keep the plant growing thriftily until it finishes its growth. We do not find on the specimens any evidence of parasite or disease, excepting the aphis before mentioned.

Disposition of House Wastes.

To THE EDITOR:—Will you kindly tell me, in PACIFIC RURAL PRESS, where I can get full and reliable directions for arranging for drainage from house—sinks, closets, etc.—without using that abomination, a cesspool? The house is to be in the country, and I want to utilize all waste matters for use in garden, both from house and stable, yet without having anything offensive on the place anywhere.—CONSTANT READER, Mayfield.

There is no difficulty about the proposition providing constant attention is given to the matter; without that we doubt if any system except that of the city house, with a constant water supply, is practicable. The free use of dry earth, such as road dust, or of powdered gypsum, is satisfactory for closets if they are constructed so that they can be easily emptied and some one will see that it is done frequently enough. All the waste water of the house, except that from the kitchen sink, can be successfully used by having a large hose connected with the house outlet so that the flow can be directed to new places by moving the hose. It works well along lines of bushes or trees providing some one will make it a particular business to see that it is moved frequently enough—new furrows made for the water and the old ones covered up. Where it is feasible the house wastes may be run to the manure pit of the stable and part of the water used in keeping the manure from firefanging. Any one with a little ingenuity can manage house wastes easily in many different ways, but no way whatever, short of long distance sewerage, will succeed until the most careful attention is given to it.

Pests of the Sycamore---Vine Mildew.

To THE EDITOR:—I send leaves and pieces of bark of what I think is the European sycamore. These trees are infested with a yellowish insect, about the color of phylloxera and surrounded by a woolly substance, resembling that of woolly aphis. The lower branches of the trees are dying off. They are situated on the south side of our barn as shade trees. What can I do to save them? Most of the insects are under the loose outside bark.

If a vineyard is mildewed one year, will this make it likely to mildew the following year, or is the fungus entirely killed before the coming spring?—SUBSCRIBER, Calistoga.

Your specimens show the presence of an aphis on the sycamore, a species different from the woolly aphis of the apple, and yet resembling it closely in its manner of growth and in the evil work which it does. The remedy would be a thorough spraying with kerosene emulsion, removing as much of the loose bark as possible in order to reach the insects which are hidden there. We find among the aphis some few "aphis lions," the larvæ of the lace-winged fly, which are doing the best they can to destroy the insects which are injuring the trees. Probably there will soon appear great numbers of California ladybugs, which will also take a hand in the battle. It would not be surprising to find that these enemies of the aphis succeeded in clearing it all away within the next two or three weeks. With forest and shade trees generally we are largely dependent upon this work of beneficial insects, because spraying would be too troublesome and expensive. There are also on the leaves you send indications of the occurrence of one of the leaf spot fungi, but this may not occur in quantity enough to seriously injure the trees.

The grape vine mildew has a form in which it is enabled to pass the winter and to reappear the following year. If this were not so, it would be far less injurious than at present. The spores of this fungus are probably always present in vine growing districts. The amount of injury it accomplishes, however, is proportional to the favoring conditions which it finds in the local climate. It is a serious trouble in some parts of the State and almost unknown in others.

Damaged Apricots.

To THE EDITOR:—Please find inclosed some pieces of apricot covered with some parasite. Please tell me what it is, and a remedy for it through the PACIFIC RURAL PRESS.—SUBSCRIBER, Lompoc.

Your apricots do not show any particular disease. The little swellings on the sunny side of the fruit seem to be due to injury to the skin by the sun in connection with the moisture, causing perhaps a little burning of the outer skin of the fruit. Underneath the affected place the tissue seems to be perfectly healthy and the fruit is protecting itself by forming new layers of cells. In the case of spot disease of the apricot (the work of the shothole fungus) this is not the case, for the work of the parasite is very clearly seen on examination of the tissue underlying the characteristic spots. We believe that the trouble is from natural causes and not amenable to treatment. It would be likely to be more or less abundant according to the alternations of moisture and heat in a season.

California Timothy or Canary Grass.

To THE EDITOR:—I send a sample of grass growing spontaneously and very abundantly in the orchard here. My horses seem to like to eat the heads about as well as they do the wild oats. It has a very tough stalk. It might make good bedding, being more durable than straw. I should judge it would make about five tons to the acre of cured hay. Please let me know what grass it is.—A. C. FULLER, Pleasanton.

It is Phalaris intermedia or canary grass. It grows freely through the Southern States and then crosses to the Pacific coast. It is considered a useful winter grass at the South, but in California is held to be of little account because of the coarseness which our correspondent mentions. Its plumed head has caused it to be called "California timothy," but the resemblance to true timothy is not very close and in quality it is notably inferior to that standard Eastern hay grass.

How Large Is a Field?

To THE EDITOR:—Can you tell me the size of the largest field in cultivation in California? While in England last summer I found that some of the stories of America's greatness were doubted and the above question was brought up. The only way to find out is to ask.—JENNIE REDFEARN, Bloomfield, N. J.

We are unable to answer definitely. There are districts in our great interior valleys where one can ride through cultivated land for miles without encountering a fence, and some of these large stretches of land may be under one ownership. Even lands owned by different parties are not necessarily separated by division fences. We are not able to tell you where the largest of these unenclosed areas may be nor the size of it. We publish your question and invite statements of sizes of acreages of any crop in unbroken areas known to our readers.

Grafting Peaches.

To THE EDITOR:—In February I grafted some Alexander peaches to Levi clings; same are doing well. I was informed the other day that a good strong union will not be formed, and that in two or three years the grafts will break away. I shall be glad of your experience on this point.—F. J. FITCH, Loomis.

We have no such experience. If the peach graft on peach takes hold well at the start, we have not found it likely to let go afterwards. If the Levi acts that way, we have not heard of it. Who knows?

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 27, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cool, cloudy weather has continued during the week, with frequent light showers. The rain has been beneficial to late grain, pasturage, corn and vegetables, but has caused considerable damage to early grain and cut hay in some sections. Hay-making has been greatly retarded, and hops have made but little progress. Green feed is unusually abundant. The cool weather and rain have been generally favorable to orchards and vineyards in preventing too rapid development of early fruit, but early cherries and berries have been quite seriously injured by the rain. Apricots and peaches are being shipped. Orange trees are heavily laden with fruit. Olive trees are in full bloom, and figs give indications of a large yield.

COAST AND BAY SECTIONS.

Cool weather has continued during the week, and rain has fallen in nearly all sections. In the central and northern counties much damage has been done by the unusual rains, principally to cut hay and ripe cherries, and in some places it is feared these crops will be a complete loss. But little damage has resulted to crops in the southern coast counties, where the rainfall was lighter than in the north; cherries, barley and hay were slightly injured in Santa Clara and San Benito counties. Grain, corn and nearly all other crops have been greatly benefited by the rain, and the prospect of a heavy yield is much better than for several years. Warmer weather would now be very beneficial to hops and deciduous fruits.

SAN JOAQUIN VALLEY.

The past week has been exceptionally cool, the first part clear and the latter cloudy, with quite general rains on Friday and Saturday. Reports are very conflicting regarding the effect of the rains on the crops; but, as a whole, it is believed that more good was done than harm. The cool weather has retarded the ripening of the grain crop and has been very beneficial in allowing the berry to fill well. In a few localities some of the heavy grain was lodged by the wind and rain, but it is not believed that this has caused any material damage. Late-sown grain has improved materially. Haying continues and a large crop will be harvested. Hay that was not stacked when the rains came will be damaged, but the loss will be slight. Fruits of all kinds and vines are doing nicely. Melons are making slow progress, owing to cool weather. Ditches are full of water, and green feed is plentiful. Stock of all kinds are in good condition.

SOUTHERN CALIFORNIA.

Nearly normal temperature has prevailed during the week. Rain has fallen in nearly all sections, and has been generally beneficial to crops, especially to late-sown grain, beets, beans and corn. Cut hay and early grain have been considerably damaged in some sections, and the continued damp weather is causing rust on oats. Hay-making has been seriously retarded by the rain. Deciduous fruits are in good condition, though somewhat backward. Citrus fruits and walnuts are doing well, though walnuts have commenced dropping in some places.

LOS ANGELES SUMMARY.—Recent fogs and rain benefited late grain, beets and vegetables, though detrimental to haying. Bean planting slow in places on account of threatening weather and ground being cold. Some complaint of beans rotting.

EUREKA SUMMARY.—Favorable weather for crops, and all vegetation making vigorous growth. Rains have retarded haying, although some clover has been cut.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, May 28, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka	.46	47.40	50.03	43.39	58	48
Red Bluff	.12	24.63	22.94	26.00	82	52
Sacramento	.44	20 21	20.24	20.11	72	46
San Francisco	.20	21.17	18.42	22.28	62	48
Fresno	.16	11.31	10.27	8.73	78	48
Independence	.18	5.83	3.65	4 56	74	44
San Luis Obispo	.06	31.13	17.20	16.76	70	40
Los Angeles	.68	16.28	7.91	17.15	76	48
San Diego	.12	11.41	5.89	9.35	66	52
Yuma	.00	3.60	1.29	2.89	92	56

FORESTRY.

Forest Endowment of Pacific Slope—Particularly California.

By Prof. J. G. Lemmon of Oakland.

Mother Nature is wonderfully lavish with her favors towards some countries, and as strangely niggardly to others. No more striking proof of this fact is found than that of the distribution of the forests over the land surface of the earth. It is but little understood that the most wonderful and valuable forest known is that of Northwest America.

This forest possesses more kinds or species of resinous-wooded, needle-leaved, cone-bearing trees than any equal area in the world, and these trees are either the largest in dimensions or they bear the largest fruits, called cones, that the earth has produced.

This matchless combination of superlative qualities has been bestowed by circumstances and forces so wonderful as to give the phenomenon the character of a distinct gift or local endowment.

Passing by the non-resinous, broad-leaved trees, of which there is a liberal allowance, the resinous-wooded, cone-bearing trees of the Pacific slope number fourteen genera or families, comprising seventy species or all kinds of trees—thirteen of the genera with forty species being in California.

Of these species twenty-seven are pines, two are larches, five are spruces, two are hemlock spruces, two are false hemlock spruces, ten are firs, two are redwoods, two are American cedars, seven are cypresses, nine are junipers and two are yews.

Enormous Size of Trees and Cones.—Three of our pines—the great sugar, the yellow and the Jeffrey pine, all of them being very valuable trees, are also the largest trees of the family, often attaining a height of 220 feet, with a diameter of 10–12 feet—no pines of foreign countries attain one-half of these dimensions.

Five of our pines bear longer or heavier cones, with larger seeds than any found elsewhere, the cones of the very valuable sugar pine being 15–20 inches long, while those of the Coulter pine often weigh 8–10 pounds, the gray pine 3–4 pounds, the Torrey pine 2 pounds and the Jeffrey pine 1½–2 pounds, while the largest cones outside of California scarcely exceed 6 inches and the heaviest rarely weigh 1 pound.

Two of our spruces attain enormous dimensions—the very beautiful and valuable Douglas spruce of the Sierra and northward becomes 300–450 feet high, with a trunk 8–12 feet thick. The great Tideland spruce of the north coast is but little less in dimensions, while the cone of the Big-cone hemlock spruce of the San Bernardino mountains is 5–7 inches long and 3–4 inches thick when ripe and expanded—these dimensions far excelling any foreign spruce.

Five of our firs, the red bark, the white bark, and the Shasta firs of California, and the grand and noble firs of the region northward, become two or three times as large as any Eastern or foreign fir, being often 200–300 feet high, 12–18 feet in diameter, with cones 6–8 inches long.

Our two world-renowned redwoods—the coast redwood and the Sierra big trees, rising to the height of 300–320 feet and enlarging, while yet young, to a diameter of 20–35 feet, and growing for 3000–5000 years—are not approached in grand proportions and regal majesty elsewhere. And the cones of one of our redwoods—the Sierra big tree—though small as compared with our pine cones, are yet, doubtless, the monsters of their race, the largest being the size of a hen's egg, while the largest cone found in connection with the fossil remains of the twenty-five extinct species do not exceed the size of a nutmeg.

So with the 2–3-inch cones of our Alpine hemlock spruce, the 1-inch cone of the incense cedar, the 1½-inch cone of the Monterey cypress, the ⅜-inch berry of the California juniper, and the California false nutmeg—all the largest cones of their respective families.

Why This Favoritism?—This prodigality in number and size extends to other vegetable growths. Our oaks are numerous and often large, with the largest acorns and cups known. One of our maples bears leaves 6–10 inches across, while the little popgun elder of the East is supplanted here by a species 12–20 inches in diameter.

Most of the trees mentioned are indigenous to California and three-fourths of them are found only in that State. Why this great prodigality of nature in behalf of the Pacific slope, and especially of little California?

The solution of this problem involves a brief discussion of certain controlling factors.

At the outset we may observe that an impassable climatic barrier is set up at present by nature, preventing migration north and south. The torrid zone, in which no resinous trees can grow except on high peaks, separates the world's forests into unequal and very different floras.

The Southern Hemisphere is the home of the araucaria, the eucalyptus and the acacia, while in the Northern Hemisphere are found—in addition to the hosts of broad-leaved, non-resinous trees, such as oak, ash, hickory, etc.—all of the large families of pine, larch, cedar, spruce and fir, with the redwood, cypress and juniper; the distribution of these trees across the two continents, however, is very unequal.

Disparity of Areas and Distribution. — The northern part of the eastern continent—Eurasia—is, approximately, 9000 miles across. North America is but 3000. We would naturally expect, for instance, three times as many pines in Eurasia as in America. Of the eighty species of known pines, only twenty are indigenous to Eurasia, while sixty are flourishing in America.

Again, the Pacific slope region, from the Rocky mountains to the Pacific shore, is about 1000 miles—one-third of the distance across—yet it has forty out of the sixty American species, fifteen being in Mexico and twenty-five in the western United States, with twenty of these in California, a narrow strip of coast only 800 miles long by 150 wide, yet containing as many pines as all Eurasia!

Now, if the distribution was equal, Eurasia having sixty pines and North America twenty, the Pacific slope, being one-third of America, would be entitled to but 6⅔ species, and little California, which embraces about one-tenth of the Pacific slope, would have little more than half a chance to get one species!

This excessive prodigality of nature in favor of the Pacific slope, and especially the California part of it, is due to a combination of factors, chief of which are the contours of continents, the trend of principal mountain ranges, the behavior of certain oceanic and atmospheric currents, the alternate elevation and depression of continental areas, together with the ability of all these factors to modify the effects of certain crucial climatic periods, called—

The Ice Age and the Thermal Age.—The phenomenon of hot and cold periods in the earth's history compelling the migration, the change of location of the entire organic world—the kingdoms of the animals and plants—is a much discussed and controverted topic. Several theories have been presented from time to time, accounting for these important epochs, chief of which is the very interesting—

Astronomical Theory.—This theory, first presented by Mr. Croll, and endorsed by Prof. Geikie and many other English geologists, "attributes the Glacial age to the combined influence of precession of equinoxes and secular changes in the eccentricity of the earth's orbit," whereby the seasons, summer and winter, would have a disparity of nearly five weeks, instead of one week, as at present; this disparity, it is claimed, would produce Glacial and Thermal ages alternately every 21,000 years.

However, Prof. LeConte, America's most renowned geologist, controverts this theory in part, quoting from many authorities, showing that but one Glacial age can be proven. Referring to the researches of Prof. Wallace and others, he asserts that the phenomenon is the result of several agencies—astronomical, geological and geographical—producing a severe Glacial age of great length, with two cumulate periods of greatest severity and a sub-Thermal period between; the age commencing about 240,000 years ago, continuing 160,000 years and ending 80,000 years ago.

Great Destruction by Cold.—During this Glacial age the plants were driven slowly, generation after generation, a few feet at a time, down across the north temperate zone, by the world-wide sheet of ice, to be as slowly driven back by waves of tropic heat.

In this double migration, owing to the configuration of continents and mountain ranges, most of the plants were destroyed, only a few vestiges of the post-Glacial families being extant to-day, gathered here and there upon the plains or stranded upon the mountains.

The means and manner of this destruction are most interesting. The continents of both the old and new world are greatly expanded at the north, while the southern portions are attenuated to narrow peninsulas.

These configurations give to the north temperate zone its greatly dominant character, having most of the existing families, while the peninsulas are sparsely furnished.

The Eurasian mountain ranges are mostly transverse, like the Alps, Himalayas and Thian-Chan mountains, forming barriers to the progress of plants; while North American ranges are nearly longitudinal, permitting the plants to escape southward during a Glacial age and return during a Thermal one.

There is much evidence found as fossils in the rock strata that an abundant flora of monster trees once occupied the Arctic regions, similar on the two continents, owing to connections then existing or to nearness of extremities.

Manner of This Destruction.—The formation of an ice cap at the pole and of snow and ice deposits on the summits of mountains lower down in latitude, drove the plants down from the northern plains and down from the mountain sides to form vast hordes of fugitives hastening to southern plains.

This hegira continuing as the sheet of ice grew and plowed its glacier beds slowly down to median latitudes of Europe and Asia, the entire members of many families were overtaken on the northern side of the mountain ranges and frozen out; others, passing between the ends of the ranges, reached the shores of the Mediterranean sea and the Indian ocean, and were then and there destroyed, a few only escaping by the narrow, devious Isthmus of Suez into Africa, while others huddled upon the three peninsulas of Arabia, Hindustan and Malacca.

On the western continent a great portion of the plants in their flight came down unobstructed to the Gulf of Mexico, to be caught and frozen there; a few eastern families escaped on the peninsula of Florida, while the greater part of the western plants ran down along the plateau of Mexico into Central America and perhaps finally crossed on the Isthmus of Darien into South America.

Greater Destruction by Heat.—Following the Glacial came a Thermal age, with contrary effects, yet with more destructive results. The ice melts on the southern verge of the ponderous ice cover, allowing the plants to return, timidly seeking the newly-emptied glacier beds. Soon after, the flood water sinking into the mountain sides, the brown earth, becoming vivified, invites the grasses and flowers to new-made homes, while sunny parterres beckon to the spying trees, promising centuries of occupation—if they can stand the climate.

The rising heat rolling in waves from the south, nearer and nearer, urges on the lagging columns, adding the necessity of avoiding death to the attraction of better homes.

But the universal return of plants from the south was prosecuted under vastly different, more destructive conditions than those of the northern flight. The plants on the return trip were attracted northward along the cool plains, and, also, some of them upward on the mountain sides—for it is the same thing in effect to ascend a mountain for cooler weather as to journey northward.

Now, the first elevations beside a valley are usually low ones, foothills, outlying ridges or higher spurs. The plants that ascended these elevations, as the heat came on and proved too severe for their constitutions, were shriveled and burned then and there—the last battle ground and altar places where were immolated the greater part of the vegetable creation of the period.

The Lone Survivors.—Here and there straggling members of a family, reaching a locality on the plain or part way up a mountain when the present equilibrium of seasons was established, found themselves suited to the environment—and it is the descendants of those plants that are the inhabitants of our plains and mountains to-day.

These terminals of broken lines of development—these remnants of a past multitudinous vegetation—ever since they were allowed to exist and perpetuate their kind, have been obliged to wage war upon neighbors from generation to generation, in order to gain or retain a foothold, resorting to changes of ground, of character, of weapons, in order to win in the incessant battle of life.

Process of Double Migration.—That the plants have made the double journey described is plainly proved by the characters of alpine plants on high peaks of the North Temperate zone. They are found to be identical with Arctic plants. Now, they could not have passed from northern regions directly to those summits during the southern flight, for the reason that both Arctic regions and these mountain tops were being slowly covered simultaneously with snow, soon becoming permanent ice. Manifestly cold-loving plants—our alpine plants—could ascend mountains only when fleeing from torrid heat, and exactly that condition was experienced on the return journey; so here on all the peaks of the north temperate zone are stranded Arctic species of plants, with less northern families established on the slopes of the mountains.

Great Forest of the Northwest.—It has been stated that Europe and Asia were deprived of their quota of plants by the many long transverse ranges of mountains preventing the passing of plants north or south, except through the wide gaps between ranges; while North America was favored by having nearly longitudinal ranges, permitting the free passage of plants to and fro along unobstructed plateaus.

The two long American watersheds—the Rocky mountains and the Alleghanies—deliminate three plateaus, Atlantic slope, Mississippi valley and Pacific slope. We have seen that the distribution of plants was not equal—the Pacific slope having the lion's share and largest growths. This is due principally to four potential agencies:

1. Conducted Northwest by High Plateaus.—The Rocky mountains, lying near the western side of the continent, extend southeasterly, upon the eastern side of the high plateau of Mexico, to Central America. The plants returning from the south at the beginning of the Thermal age, 80,000 years ago, were divided at the outset in southern Mexico, and a large part barred out of the Mississippi valley by the cordilleras, that killed off unfortunate individuals or families who ascended their foothills and spurs, as described, while other families or other members of the same families were attracted to the broad, free, and, at the time, cool and inviting pathway, along the high plateau of Mexico and Arizona, diminished

at every degree by the many-spurred Rocky mountains, the survivors escaping to pass into the valleys and along the sides of the mountain ranges, some of them particularly directed northwestward again by the favoring coast plateau, decimated the while by the high, similarly inclined and destructive Sierra Nevada, to reach final destination in California and the region northward.

2. Distributed by Warm Japan Current.—A very important agency helping on the capture and directing the distribution of the trees all along the western coast from California to Alaska, is the presence in the North Pacific ocean of the warm Kuro-Siwa, or Japan current, primarily a hot tropical current, striking the islands along the southern coast of China and deflected northward, to be more deflected by the Japan islands and hurled northeastward across the Pacific ocean, there striking the southern side of the long chain of Aleutian islands, which turn a part of the current down along the coast of America, delayed and accumulated during its long sweep by the many islands and capes on the way, while its heat rises into the atmosphere, carrying with it enormous quantities of water.

3. Nourished by Moist Landward Breezes.—Another factor closely connected with the preceding is found in the cool, broad, overrunning Pacific breezes that prevail most of the year on the northwest coast. Mingling with the heated and moisture-filled air over the Japan current, the volume presses inland, the moisture condensing and falling most copiously upon the nearest cool elevations—giving sustenance and stimulus to the richest and most remarkable forest on the face of the globe.

4. Developed by Semi-Tropic Heat.—The fourth factor necessary, it is found, for the production of largest growths, is a high degree of heat, of which the Puget sound region lacks sufficient for some plants, although many of her trees, such as the Noble, Grand and Amabilis firs, and the very valuable gigantic cedar, or shingle tree, become monsters, and the Douglas spruce, one of the most valuable timber trees on the earth, becomes in Oregon and Washington the tallest trees known—450 to probably 480 feet high!

This necessary heat is found under the semi-tropic sun in the latitude of California. This heat, added to the enclosed condition of the State—the high Sierra on one side, the lower Coast Range on the other admitting the ocean breezes through its passes, and with low, interlocking ranges at each end—furnishes just the right conditions, it seems, for strongest allurement to enter and for highest development afterward; for here only, in this cul-de-sac of California, are found the largest cone-bearing trees on earth, of some nine different genera; and here only are found the largest and heaviest cones of sixteen different species.

Is it not passing strange that out of the twenty pines of Europe and Asia, and the twelve pines of the Eastern States, not one should develop cones as large as either one of five pines in California?

Tribute to California Climate.—The great truth is forced upon the attention that it is California that was set apart from all the world when, as the geologists tell us, the Pacific slope was raised from the ocean bed, in recent geologic times, by a mighty geotherm or earth heat wave, with the Sierra and Cascade Range as its axis of elevation, followed in a later age by another uplift, with the Coast Range as its axis; while the long, narrow valley between the ranges was cross-fenced by low mountains into several magnificent parks, principal of which are the valley of California, the smaller Willamette valley and the extensive Puget sound region.

Of these, California was assigned first place in the pathway of the southern fugitives, inviting to enter and urging to tarry and form a natural, unexampled arboretum within her mountain walls, supremely aided thereto by a semi-tropic sun dispensing beneficient heat—the whole array of factors mentioned conferring to produce the most generous and forcing climate on the face of the earth—as magnificently evidenced by this matchless forest endowment.

A Prophecy.—There is a collateral thought, pregnant with great promise, clearly deducible from this forest phenomenon. Because the physical conditions producing largest and best forms in one of the two organic kingdoms—the vegetable—prevail now upon the earth in one sequestered region, we may believe that the other kingdom—the animal—and especially the human family, is equally susceptible to the world-excelling stimulus, and we may logically expect that this favored clime, with the contiguous country described northward, is the coming empire of the earth, with a people pre-eminent in moral as well as intellectual development and architectural achievement.

THE FIELD.

Wild Barley or Foxtail.

California readers will take gloomy satisfaction in knowing that they have companions in foxtail misery. Prof. A. J. McClatchie of the Arizona Experiment Station gives an interesting account of it in that bailiwick:

Foxtails.—There is now maturing in southern Arizona the seed of a grass that should be destroyed as promptly and thoroughly as practicable. It is known in this region most commonly as foxtail. There are about a dozen grasses in the United States known as foxtail, but the one so called by this name in Arizona is not so called in many other parts of the world to which it has spread from Europe, the place of its origin. It belongs to the same genus as our common cultivated barley, and is simply a wild barley. Cultivated barley was called hordeum by the Romans, and is now known among botanists as Hordeum hexastichon, which is simply the Latin for six-rowed barley. The botanical name of the troublesome weed is Hordeum murimum, the Latin for wall barley. Since we call the corresponding species of oats wild oats, this weed is very properly called wild barley.

A Recent Arrival.—But, whatever its correct common name, or whatever it is to be called, it is certainly a very troublesome pest. It is by far the most noxious weed of the Salt River valley, the writer receiving more inquiries concerning it than concerning all other weeds combined. The inquiries have been especially numerous during the past year, indicating that the weed is becoming more common and troublesome. The fact also that Prof. Toumey in Bulletin 22, "Something About Weeds," issued only a little over four years ago, does not mention this one indicates its recent introduction, or at least that it has only recently become troublesome. It is now the most widely spread and most common winter and spring weed of at least the Salt River valley. It is everywhere—along roads, fences and ditches and in fields.

How It Grows.—Wild barley is an annual that grows from seed just as cultivated barley does. It starts to grow in the fall or early winter, at about the same time that barley is commonly sown, and matures in the spring or early summer, as does cultivated barley. Like the latter, it grows readily with alfalfa during winter, making the most of its growth while the weather is too cool for alfalfa to grow rapidly. It is in alfalfa meadows and pastures that it is the most troublesome. When young it is eaten quite freely by cattle, but as it approaches maturity it is avoided by them, and thus gets an opportunity to produce seed. Even when grazed quite closely it manages to produce short-stemmed heads that the cattle avoid. The reason it is allowed to mature seed in pastures, as cultivated barley would not be, is that the grain is very small and the beards very rigid and very irritating to the mouths of stock. Consequently the wild barley succeeds in producing a good crop of seed with which to sow the ground for the coming season.

The Business End of It.—Not only does the wild barley have the objectionable beards of common cultivated barley, but its heads break up into short sections, with sharp, piercing points, that work into the lining of the mouth and other parts of the digestive tract of animals. This causes this pest to be very objectionable in alfalfa meadows, where it approaches maturity just in time to be cut with the first crop of hay. Its presence in alfalfa hay causes an annual loss of thousands of dollars to the farmers of the Salt River valley. A combined effort that would destroy the pest, or so reduce its numbers that it would no longer infest meadows and pastures, would be worth a large sum to Arizona.

What to Do With It.—To eradicate this weed will be no easy task, but much can be done to check its spread and to decrease its prevalence. If all the wild barley seed that is maturing this month were destroyed, there would be much less of it next season. It would be impracticable to destroy it all, but much of that growing along roads, fences and ditches can be cut and burned. This is what every farmer in Arizona should do. It will be useless to attempt to eradicate it from fields, if that which grows elsewhere is permitted to mature and seed the fields. The heads, as has been stated, break up into short sections that cling to animals, to clothing, or are carried along by wind or irrigating water. To prevent this distribution of seed it would pay a farmer to destroy the wild barley growing along the fences and ditches of his neighbors, if the latter failed to do so. Every farmer should at least see that the public roads adjacent to his lands are cleared at once of the seed now maturing.

While seed destruction should be the present procedure, the prevention of seed formation should be the aim during the coming season. Plants are more easily destroyed when small than at any time later in their development. As this grass is the principal one that makes its appearance along fences and in other waste places during fall and winter, all young grass should be destroyed as rapidly as it appears, with whatever implement will best accomplish the desired result. In alfalfa fields the disc harrow is the best implement for the destruction of the grass when young. Running this implement over pastures and meadows one to three times during the winter does much to destroy the wild barley, and benefits rather than injures the alfalfa.

The railways have agreed to accept twelve tons of fresh fruit as a minimum carload, instead of thirteen tons, as last year. They do not promise anything yet as to quick and regular time.

SHEEP AND WOOL.

Angoras at Home and How to Get Them Away.

Dr. W. C. Bailey, son of Col. C. P. Bailey of San Jose, has been in the home of the Angoras, and he writes a very interesting account for the American Sheep Breeder of what he saw and how he succeeded in getting some new blood for California:

At Bradford.—After leaving New York I went to England and spent some time looking over the Bradford country. The mohair manufacturers and dealers were very kind and showed me which kinds of mohair they want for making the different classes of goods. I saw much mohair, both from the Cape and Turkey, and was rather surprised to see how well the Cape mohair averaged. Some of the lots were quite equal to Turkish firsts. Our American manufacturers had shown me that our best clips were equal to Turkish firsts, but I had always looked upon Turkey as the Mecca and I was looking for the best.

In Turkey.—Now, I have been into the interior of Asia Minor and personally examined the choice flocks of the best districts, viz., Angora, Beibozar, Kjutiah, Eski-Chehir, Kartomonia, and others, and I do not hesitate to say that America has many individual animals which are superior to any which I have seen in Turkey. However, I have secured new blood for America.

The Turks and the Americans.—The general average of Turkish flocks is very good, but when one tries to select an individual combining many good points he finds it a difficult matter. The Turk does not know how to, or at least he does not care to, make good points, hence his flocks are just as they were fifty years ago. In America and Africa the start was made with Turkish goats, but in these countries the breeding stock has been carefully selected and improved, until to-day Turkey can gain some points by importing foreign stock. Our flocks have been largely formed by crossing on common does, and many of our grade flocks are poor, hence the general average of our mohair clip is much inferior to that of Turkey. If, however, we continue along progressive lines, it will not be many years before America will lead in the quantity as well as the quality of the mohair produced. We have the climate, range and start, and by careful selection and grading our flocks will improve rapidly. It only needs a glance at the cuts of the first Angora goats imported by Dr. Davis in 1849, and those of more recent breeding, to see what has been done in recent years. If we could import a few thousand and thus start with good flocks it would be advisable, as it would save the time necessary to grade up from the common goat.

Angora.—In the villayet of Angora, about 50 miles northeast of the town of Angora, and about the same distance from the railway, goatmen were grazing goats over low, rolling hills covered with a kind of sage brush similar to that of our inter-mountain States. Some 400 head were in one flock, and there were at least five other flocks in sight. The country was alive with goats and bedbugs. There were several black or colored goats in each flock. In fact, there are very few herds in Turkey which are free from colored animals. I even found some of the Turks breeding bucks with colored streaks down their backs. I persuaded the shepherd and owner of one flock to allow me to examine a few of the goats. The first animal inspected was a two-year-old doe, which looked rather above the average. She had a fairly heavy, ringlety fleece, a bare face, small, spirally twisted horns and drooping ears. On parting the hair on the side I found it a trifle oily near the skin—about a 10-inch staple and quite kempy. The kemp was fine and short, and hence would not have affected the value of the hair much. The hair was fine-fibered and would class as "good." It was lustrous and would not have been refractory in spinning. Over the hips and down the thighs was considerable kemp of a coarse variety. The belly was thinly covered with a much shorter fiber than on the sides, and there was also a large proportion of long kemp here. This doe would have shorn three or four pounds of good mohair, and she was a fair sample of breed. There might have been a few better, and certainly there were some worse. I could not find one which combined many good points.

Getting the Goats.—After inspecting many goats and seeing thousands, I selected four animals from various parts of the country which combined the greatest number of good points. The Turkish Government had said "No," and every one who knew Constantinople and the Turks had said, "You cannot get out. It can't be done. I have lived in this country for years, and if any one can do it I can, but I advise you to save your money." And after having been followed for three days while in the interior, and knowing that our own growers might think my opinion was "sour grapes," I decided that money and energy might teach "an old dog new tricks."

The goats are a sorry looking lot now, but they are the genuine and will grow new hair for the shorn locks in the sunny California climes. A ride on mule back, then on camels, a trip in a closed carriage, then to be tightly packed in a sack and carried for

miles on a man's back; next to be given a hay ride on the Bosphorus (under a boatload of loose hay); to be shorn in cold weather and run through coal dust, only to look a death ax in the face, but to be saved by a golden wand; again, through the streets of the Oriental capital in an open wagon, but looking more like dead animals than live ones, even now to be stopped three times by customs officials and police, and as many times passed by that wonderful bakschiesh from an invisible hand—they are out of the Ottoman empire now, but they have yet a long and tiresome trip. I hope that they may impart some good points with their new blood.

Sheep on the Forest Reserves.

J. H. Kirkpatrick, the well-known sheep breeder of Stockton, writes a reply to a forestry advocate who impeached the sheep, for an Eastern journal. Much of his letter is occupied with controversial sallies at writer whom he criticises, which we omit because we cannot supply the cause of the controversy. The following are the clear claims on the side of the sheep:

The sheepmen have been taking their flocks to the mountains since the dry year of 1864. They have in many instances taken up land and improved their ranges under the laws of the United States and decisions of the Supreme Court declaring the public lands to be "commons," and had built up an industry that was utilizing the foothills and mountain ranges in a way that was bringing considerable wealth to the State, giving to the consumers a large supply of healthy meat at very low cost.

Every laborer on the farms and in the cities was a gainer by the industry. No harm resulted to the forests or the water supply of the valleys.

The forests were increasing, the lands suitable for agriculture were being taken up and improved, cheap meat was furnished to everybody, and the wool from our flocks clothed the multitude.

Already the millions of sheep formerly kept in California are reduced to less than one-third the number formerly kept. The foothill ranges are worthless, while the butcher pays twice as much for his muttons as he did before the forests were reserved, and the poor man goes hungry.

Nor is this all. By preventing the sheepmen from going on their mountain ranges and not allowing them to kill the "varmint" that they had kept thinned out by constant vigilance, the bear, California lion, coyotes, wildcats and other beasts of prey are rapidly killing off their deer and destroying the domestic animals of the mountain settlers at an alarming rate. Who is benefited? A few cattlemen, perhaps, but in our State the strife between the two branches of the grazing industry, as old as history, had well nigh died out until revived by these illegal exclusions of the sheep from forest reservations.

The sheepmen are prepared to prove that every allegation made against them by the forest superintendent or the nameless authorities he quotes is false, and they court the fullest investigation. The recent Act of Congress allowing the pasturing of live stock on the forest reserves in other States should have included California and Nevada as well, and believing they have the right already the sheepmen are generally preparing to take their stock to the mountains, and if the forest ranger or his superiors of the Interior Department undertake to dispossess them they may expect an organized resistance. The sheepmen have been staunch supporters of the party in power and were not led astray by the cry of imperialism in the recent campaign, but some of them are inquiring if we are not, after all, living under an autocratic government right here at home. The Interior Department as represented by its rules and regulations governing forest reserves is certainly tending in that direction.

THE DAIRY.

Good Milk and How to Secure It.

By W. J. Stroud, manager of the Tule River Creamery, at the Farmers' Institute at Poplar.

All writers on the manufacture of dairy products begin by saying, first of all, that to have high grade goods the maker must have good milk. Every successful dairyman who sells milk to families in the cities will say his success lies in the care he gives his milk. The degree of success which a creamery attains, or which it may attain, depends very largely on the manner the milk it receives has been hauled. The progressive and successful cheese maker, who makes a uniform quality of high-grade cheese which always brings the top price, makes his cheese from milk that has been well and properly cared for.

On the other hand, failure in any branch of dairying, or in the manufacture of any dairy product is sure to follow improper, careless, slipshod handling of milk, and if we thoroughly study the success and failure in the manufactures of dairy products we can in nearly every case trace the principal cause to the care, or lack of care, of milk. The success of a creamery and the reputation of the butter maker will be very uncertain unless the milk it receives is well and carefully treated every day in the year.

In June of last year the city of Los Angeles passed an ordinance forbidding the use of any kind of preservative in milk or cream. At first the dairymen thought a great hardship had been imposed upon them and that it would be impossible to furnish their customers with milk and cream that would be satisfactory in keeping qualities, but by right methods in the handling, their milk was much improved in every respect and they were able to give much better satisfaction, both to their trade and to themselves, than ever before.

Proper Care Essential.—If what I have said be true—and I believe it is—then the proper care of milk from the time it is milked until received at the creamery is the most essential thing in the manufacture of high-class creamery butter.

Probably one reason so much milk is delivered at creameries in bad condition is because patrons have never been shown that it is to their interest, and that it will pay them well to bring their milk in prime condition, and that every time a creamery receives bad milk every patron, the owner and butter maker are injured; because every batch of poor milk received affects the flavor of the butter, lessens its value, decreases the brand and injures the reputation of the man who made it. Not alone do the patrons of that particular creamery suffer, but the patrons of every other creamery in the same section of the country are damaged, because the reputation of the butter of that locality is injured. No butter maker can make faultless butter where tainted and badly cared for milk is received, and if the management does not know enough to detect it and refuse it, or manifest no anxiety or worry about it, or will not speak about it to the patron for fear of losing his patronage, and continues day after day receiving bad milk, he will soon find there is something decidedly wrong with his business. The patron will be getting smaller checks and the butter maker will be looking for another job. We may also, and I think without any doubt, find one of the causes of some of our surplus and low priced butter in the filthy milk we receive at our creameries.

Poor Milk Should be Refused.—Another reason we receive so much bad milk is because we accept it and pay as much for it as for good milk, which is evidently wrong, because in so doing we encourage the bad milk. We often do it because we are afraid of offending the patron and losing his patronage by refusing it, but I cannot agree with the creamerymen who think thus, because if a patron's milk is not good he generally knows it, and he also knows it is bad through his own careless, slipshod methods of handling, and if you insist in a firm, but polite manner, on having nothing but clean, good flavored milk, he will in nine cases out of ten take no offense and bring his milk in good condition.

Duty of the Butter Maker.—In order to accomplish this improvement the butter maker must lead patrons to take an interest in their part of the process. He must gain their respect, show them that he is intensely interested in his work, and that he is working for their good and watching their interests. He must appeal to their consciences and show them that it is not right that all should suffer for the neglect and carelessness of one. He must be vigilant and watchful at the weigh can and must be firm in his refusal to take milk that is unfit. He must make them fully and thoroughly understand how and why bad milk delivered by one patron is the cause of a financial loss to each. His milk may decrease the value of the entire production of that day and cause a loss to every patron. The patrons expect the butter maker to make a first-class article. He, therefore, has the right to expect them to furnish first-class milk, clean and free from taints and foul odors. He must teach them how milk generally becomes contaminated, the causes of the bad changes, and how to avoid them in the most effective manner.

Ignorance to Blame.—Many patrons do not thoroughly understand the fundamental principles which should be observed in the delivery of good milk. Ignorance of these principles, probably, is as much the cause of bad milk as intentional neglect. Many patrons will promptly improve conditions when their conditions are pointed out to them. The time has come when milk need not be hauled according to uncertain theories. Science has come in and enlightened us so we now can trace many effects to their causes and avoid many objectionable conditions in milk by removing the causes that made them.

Bacteria.—It is a well-known and established fact that souring, bad flavors, decomposition and putrification in milk are caused by minute, microscopic vegetable organisms called bacteria. Their study will become at once interesting, instructing, and profitable to any one interested in the production or handling of milk. So much has been written about them and their action upon milk that any one desiring to post himself can easily find plenty to read about them, and I think the patrons should be induced and encouraged to read upon this subject so that they can more intelligently care for their milk. It is not necessary to go into details as to the effects produced by numerous forms of bacteria. Some are very troublesome whenever they find their way into the milk, producing disagreeable flavors whenever they are allowed to multiply therein. Patrons should be taught how to keep as many of these germs as possible out of the milk, and also how to retard their action and thereby deliver their milk in good condition. After the patron has learned something about bacteria and their action on milk, and finds they cannot all be kept out he naturally asks himself how the harmful action of those that do get in can be stopped. When he knows their source, how to avoid their getting into milk, and how to stop their action after getting in, he should be held wholly responsible, and he alone, for the condition of his milk. But, until the patrons have made some study and have obtained a more thorough and practicable knowledge of bacteria, butter makers must content themselves by giving instructions and laying down rules for the care of milk. But without a more thorough knowledge of milk, the patron cannot see the use of all the extra work you put upon them and will neglect some of the most important steps in the care of his milk, thereby rendering almost useless the other things he does that he happens to think of. The different steps in the care of milk may be compared to the parts of an engine, if one necessary part is weak the strength and usefulness of the whole engine is impaired.

Education.—If in giving instructions and laying down rules the butter maker can show the patron the whys and wherefores of each and every step, very much will have been done to secure a better quality of milk for our creameries. In fact, the whole thing resolves itself into a matter of training and educating the patrons on this too-much-neglected subject. One way to teach them would be to outline a talk explaining and describing in detail each step in the care of milk fully and clearly. Another good way to educate the patrons is to put reading matter treating on this subject into their hands. A great deal of this can be had for the asking from the Department of Agriculture at Washington. Farmers' Bulletin No. 63 treats this subject very exhaustively, and should be in the hand of every creamery patron.

United Effort.—Creameries near each other should make a concerted movement in this matter for the mutual benefit of themselves and their patrons. They should meet and formulate a definite plan of action, work in unison, for in this, as in other things, "in unison there is strength." They should secure and distribute literature, publish rules and instructions, hold meetings to instruct patrons; and as aeration and cooling is the very best thing that can be done for milk, they should adopt some good aerator and cooler to be used by every patron, and make its use obligatory; but to do this each creamery must refuse to receive milk from patrons who quit other creameries because fault was found with their milk, or because they would not use the aerator and observe the rules and instructions.

The creameries, fifteen in number, comprising the Los Angeles Creamery Board of Trade, unanimously adopted resolutions favoring aeration and adopted an aerator, after having made thorough investigation, which strains, aerates and cools the milk. Each patron is supplied with one at a small outlay and is obliged to use it; otherwise his milk will not be received by any of the Board of Trade Creameries. So far no one has refused to use the aerator and follow the rules and instructions. This has made a decided improvement in the quality of the butter. But these things alone will not be sufficient. The butter maker who would have good milk must, instead of having some cheap boy at the weighing platform, take his position there himself, inspect every patron's milk and in justice refuse to accept any and all milk that is unfit. This must be done without partiality, no matter who brings the faulty milk, for it is not right that all should suffer in pocket and reputation for the neglect and carelessness of a few. Of course, it requires a great deal of tact, and judgment and common sense to do this, and there should be no doubt about its justice in the mind of the patron. By carrying out this plan the butter maker can best secure the interests of his patrons, command their respect and win a high reputation for himself and his goods.

The resort to onion growing in the Stockton vicinity this year has brought large supplies in, so that the demand is dulled for the moment. It is reported from Stockton that those who went about among growers a short time ago estimated the season's yield at from 80,000 to 100,000 sacks, or about 20% more than ever before. Most of the onions are grown by Italians, who have small holdings of land. They produce from 250 to 300 sacks on an acre, and secure from 60 to 80 cents per sack as an average price. As high as 412 sacks have been obtained from an acre, but this was an exception. It is probable that the drop in values in this market may help in the disposition of the crop elsewhere. As the California crop is available a month or so before the onions grown in Texas and Louisiana, the California vegetable goes well throughout the Middle States, and several of the Stockton commission men have for some time had orders for dozens of carloads to go as far east as the Missouri river, but the growers refused to sell in such quantities as the dealers would like. With the present local situation, growers will be ready to furnish material for this movement.

Agricultural Review.

ALAMEDA.

THE CHERRY CROP FAILURE.—San Leandro Reporter: The failure of the cherry crop in Alameda county, about which a good deal was said at the time the heavy frosts occurred, is now a conceded fact. A full cherry crop in Alameda county means $250,000 or $300,000 in money, and perhaps more. It is estimated that in the San Leandro section there are 450 acres of cherry land, and that a full crop there is worth $100,000. In the region of Haywards and San Leandro and in the Niles and Centerville sections there is a much larger cherry crop. A representative of one of the canneries of the county made a tour of the San Leandro district a few days since and found that there were almost no cherries of any variety to be had. The manager of a local cannery at San Leandro stated, as further confirmation of this report, that in a two days' run his cannery could put up every cherry in Alameda county.

BUTTE.

FINE HEMP.—Chico Record: John Heaney, the father of the hemp industry in this State, planted about 200 acres of land to hemp about five years ago on the Kirk ranch near Gridley, and the average height of this hemp was 15 feet, while on many of the fields the stalks attained a height of 18 feet. This year Mr. Heaney has 300 acres of the farm of Congressman Marion Biggs, near Gridley, planted to hemp and this has now attained a height of 4 feet and has several months to grow. His last year's crop brought better prices in the Eastern market, though the fiber was in tow, than the famous straight-fiber hemp of Kentucky, which is supposed to be the finest grown.

WILD MUSTARD.—Biggs Argus: Mustard is becoming a menace to future crops, and unless the farmers take active steps to destroy it their land will in a few years be so seeded to it that it will be almost impossible to produce a crop of grain.

SUGGESTIONS AS TO HOW TO TREAT RAIN-DAMAGED HAY.—Chico Enterprise: Walter Ballard, who has had, perhaps, a more varied experience in handling hay under all kinds of conditions than any man in this section, gives the following opinion as to the proper treatment of hay lying in the shock during rain: Hay should not be scattered, but should be allowed to remain in the shock until nearly dry, but stacked before it becomes thoroughly dry or bleached. In stacking, salt should be scattered through the hay —about three or four pounds to the ton— which will prevent immediate sweating and will absorb the moisture before the hay is thoroughly dry. It will also cause an even color and its ordinary freshness will be retained. The sweating process is very essential, as it produces the sugar in the straw, which makes its feeding and strengthening qualities.

CALAVERAS.

A JACK WITH WHITE AND CURLY WOOL. — Calaveras Prospect: Farmer Vance of Jenny Lind has a pair of young twin jacks that he is prouder of than is their own mother. He calls them Jack and Gill, and they are truly fine animals. One of them is not particularly different from any juvenile of the species and resembles its mother in all except size; but the other is covered with a fleece of wool, white and curly as a sheep.

COLUSA.

SOME GOOD AND SOME HARM.—Colusa Sun, May 24: The damage by the late rain will be confined practically to the hay crop. The feed, owing to the preceding rain, had not dried up enough to be badly damaged now. It will do good to all late-sown grain, and will make some of the earlier winter sowing heavier and plumper. At this writing it is hard to say just how much good or how much damage has been done. If the hay makers had been more in earnest about getting the hay under cover, the damage would not have been great. It may be said, in extenuation of the seeming lack of proper exertion to get the hay housed, that the cool weather of the previous ten days did not by any means promote the rapid curing of the hay, and much of it was not dry enough to put up in bulk.

MERCED.

WILL PAY A BOUNTY ON COYOTES.—Hanford Sentinel: The supervisors of Merced county have passed an ordinance placing a bounty of $1.50 each on coyote scalps. The ordinance is so drawn as to leave little room for trickery or fraud. The person claiming the bounty must produce the body of the coyote before the supervisors or justice of the peace of the district, and the animal must be scalped in the presence of such official. For this the claimant must pay the official 25 cents for each coyote, leaving the bounty really only $1.25.

SACRAMENTO.

NEW FRUIT PICKING BASKETS.—Folsom Telegraph: R. A. Wakefield of Orangevale has invented a basket for fruit pickers which promises to be a decided success. It is made to hang over the shoulders by straps and is so arranged that the person using it has perfect freedom of the arms. The basket is also contrived so that it can be emptied without bruising the fruit, as is often done with the ordinary basket.

MADERA.

BEATS AN INCUBATOR.—Madera Mercury: W. H. Rowe, who lives in the Hughes addition, has two turkey hens which are better than incubators for hatching eggs. These two birds have hatched out 140 chickens each, having set seven weeks continuously. At the end of the seventh week one of the turkeys struck and refused to set on the eighth batch of eggs. The other bird is now on the eighth setting, and will be finished in a week and a half. Twenty-five hen eggs were put under each turkey, the birds being able to cover that number. They averaged twenty birds to the setting. As fast as the chickens were hatched they were placed with broody hens. Mr. Rowe is an Englishman who learned the trick of forcing turkeys to work overtime in the old country. He arranged his nests so that he could keep the turkeys locked in. Every day he took the hens off the nest and fed them in a little yard, closing the door leading to the nest. When the bird had been fed the door to the nest was opened and the birds were allowed to go back. In cold weather the birds go back at once, but when the weather is warm they remain away a long time feeding.

SAN JOAQUIN.

CREAMERY BEING RUN ON THE CO-OPERATIVE PLAN. — Lodi Sentinel: Heretofore the patrons of the Lodi creamery have been paid only according to the amount of milk each brought in, and whatever surplus was left after deducting running expenses was devoted to wiping out the original debt contracted by the stockholders, who purchased the plant and finally had to double its capacity. Up to this time the stockholders have not received a cent on their outlay, but now that the debt has been cleared away they will come in for a fair dividend, after which the patrons will divide the balance of the profits among themselves pro rata. In addition, the patrons will be paid at the end of each month, as usual, for their milk. Only those of the patrons who enter into the agreement, however, will get in on the co-operative movement.

EXCEEDINGLY LARGE EGGS. — Lodi Sentinel: Harrison Brannack enjoys the distinction of having a big Black Minorca hen which lays monster eggs. He has quite a hennery and has good success with his fowls. He exhibited two eggs laid by this famous hen, each measuring 6½x8 inches. They were perfect specimens. This one hen in particular steadily lays such eggs, though these were larger than the usual product. Except for fancy settings these large eggs are worth no more than the common kind, the dealers making no discriminations. For hatching they sell at $1 per set.

SANTA BARBARA.

NEW DEVICE FOR PULLING UP TREES. —Santa Barbara Press: Mr. Higgins of Carpinteria has found it necessary to pull up 100 barren lemon trees. For this purpose he has devised a novel arrangement which lifts the tree from the ground, roots and all. The contrivance consists of a stout triangular wooden frame a few feet in height. This is placed against the trunk with its base a few feet from the butt of the tree, and a rope is passed over its top, connecting with a block and tackle on its outer edge with a chain grip on the tree at the other end. A team of horses is thus easily able to pull the tree without cutting the roots.

SANTA CLARA.

EFFECTS OF THE RAIN.—Gilroy Gazette, May 25: The rain on Monday was general throughout this and other coast counties. In this city the precipitation was .80 of an inch, making the total rainfall 24.69 inches for the season. The damage done in this valley was principally to standing grain, large areas of which were flattened. As to hay, we are informed that the loss will be nominal, because the storm was followed by sunny weather. Orchards were benefited, as cultivation is now possible.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: The rain may have done damage to cherries, but the crop is so light that in but few places will it pay for picking.—— This seems to be a Gravenstein year. The trees of that variety are unusually full of fruit. There may be a better apple than a perfect Gravenstein, but not in its season.——Foothill orchards northwest of this valley, in which there was promise of a good prune crop four weeks ago. have been well thinned by the "drop" which has been going on this month.——The Newtown crop this year is something which surprises even experienced orchard buyers. It is extremely heavy, and the healthy character of the trees gives promise that all of the crop which should mature will remain.——Several berry growers are "trying out" new strawberries in the effort to find a variety that will take the place of the Melinda, which is claimed to be "wearing out." We were shown this week a sample of a new berry which M. A. Hudson is experimenting with. It is a handsome berry and looks as if it would stand long distance shipment. If it will bear up to the Melinda it will be a winner for Mr. Hudson. A firm berry— one that will stand shipment to Arizona and southern California points, is called for by the trade.

SOLANO.

FAIRLY GOOD CROP OUTLOOK.—Dixon Tribune: There will be a full crop of peaches after all. Some orchard men are thinning while others are saved that trouble. Prunes are a failure while almonds are rather short. From the present outlook, the almond grower would be justified in demanding 15 cents for his high-grade almonds, and it looks as if he would get it. The recent rain will have the effect of increasing the grain crop in some places at least 50%.

SONOMA.

TO HAVE A CANNERY. — Sebastopol Times: The Rose cannery will be located at Sonoma. W. A. Rose and Mr. Suydam, constituting the Rose Cannery Co., have accepted the offer of the Sonoma Valley Bank and the Sonoma Board of Trade, giving them an acre of land fronting on the California Northwestern Railway depot and a large wine cellar building. All that now remains is for the requisite sum to the raised for the removal of the cellar to the proper place. This the board has proposed to raise. The cannery is expected to operate this season.

PROSPECT OF GOOD CROP.—Santa Rosa Press-Democrat: A correspondent writes from Summit Joint that the weather there is most favorable for all growing crops. Foggy mornings and cool atmosphere have been in evidence since the late rains. Early sown grain will produce a heavy crop of hay and late sown has been greatly benefited by the late rains and will make a good crop. Most kinds of fruit will make a fair crop if the weather continues favorable. It is hoped that the open season for frosts has closed. The grass on the ranges is most abundant and stock is doing well.

SUTTER.

BEES A BENEFIT TO ORCHARDS.—Sutter County Farmer: In several of the cherry orchards near this place the crop has been larger than usual and well distributed over the trees. In conversation with a local grower recently, he attributed the good crop largely to the presence of a large number of bees which he had installed in one of the centrally located orchard. Shortly before the blooming season he had a bee man bring a lot of hives of these busy workers to the orchard and kept them there until the fruit set. The bees evidently had much to do with the thorough pollenization of the blossoms, as the excellent fruit crop showed.

TEHAMA.

BAD FOR THE SHEEP. — Red Bluff Cause: Some of the sheep men who started to the mountains early this spring with their sheep were caught in severe storms and many of them have suffered heavy loss. Mandus Johnson, who had his sheep near Yolo Bolo when the storm set in, reports that he lost 150 head. He was not so far in the mountains but what he could return to the valley. He says there were several ahead of him who could not return and they ran the risk of losing all their sheep. At Deer creek meadows it is reported the sheep are running wild and find feed scarce owing to the snow, and the owners of them may never be able to gather them up.

SERIOUSLY INJURED BY A STALLION. —Red Bluff Sentinel: Frank Cassin lies on a sofa in the office of the Luna Stable, with his head bandaged and a piece bitten from his scalp, his right thumb broken, from which the bone protruded, his side badly bruised and his other hand bitten. The injuries were inflicted by Henry Weltfeldt's stallion "Escort," which has been raced over the northern circuit, and has always had the reputation of being kind and easily managed. Mr. Cassin has taken care of him for two seasons and never had any trouble before. To-day "Escort" was tied by guy straps from each side of his head, and he was being curried on the neck by Mr. Cassin, who was facing him, when the horse broke the straps and reached around and caught Mr. Cassin under the right arm with his teeth. Frank was lifted from his feet and shaken as a terrier would a rat. He tried to beat the horse off, but was held down and he then crawled under the manger. The horse got down on his knees to reach under the manger and caught Mr. Cassin's hand in his mouth and pulled him out. The maddened animal then began to bite Mr. Cassin's head, taking a piece out of his scalp. The injured man cried for help and again crawled under the manger, when the horse again got down on his knees and got Mr. Cassin's other hand and arm in his mouth. The animal was dragging his helpless victim out when help arrived, and as the men shouted to the horse, he turned to the front of the stall, and they caught the end of the broken strap, allowing Mr. Cassin to escape.

TULARE.

FARMERS RUNNING HOGS ON GRAIN FIELDS.—Tulare Times: More than the usual number of Tulare county farmers will harvest their grain crops by turning hogs into the fields, thus getting away from high-priced bags and the whole problem of harvesting.

COYOTES CAUGHT BY POISONED EGGS. —Porterville Enterprise: Something had been disturbing the sitting hens of A. Ratliff near Terrabella, and he thought he would try to capture the intruder. He poisoned two eggs and placed them in a nest. As a result he found two dead coyotes the next morning lying some distance from the barn.

EXPERIMENTING WITH THE PISTACHE NUT.—Visalia Delta: I. H. Thomas has received from the United States Department of Agriculture some roots of Pistacia vera, which he has set out and will cultivate. The pistache is a valuable nut tree, well suited for culture in regions having a hot, dry climate. The nut sells in this country at from 40 cents to $1.25 per pound, wholesale. They are already extensively used in America for flavoring confectionery and ice creams, and it is confidently expected that they will be widely used as a table nut, to be served like the almond, as soon as they become better known. In the eastern Mediterranean countries, where the pistache is the best known and choicest nut, it is much more used for eating from the hand than for flavoring. They are among the most delicious nuts known, rather smaller than the almond, but more delicate in flavor and a little oilier, somewhat resembling in texture and taste the pinon of the Rocky mountains. Unlike the pinon and the almond, the pistache nut has a shell easily opened with the fingers, since it consists of two thin valves, which split open and become nearly separated as the fruit dries.

YOLO.

THE FIRST CAR OF FRESH FRUIT.—Winters Express, May 24: The first full carload of green fruit for the season left Winters Monday, May 20. It was made up by the various companies. A car a day is going now and the quantity will rapidly increase, as fruit is ripening fast, despite the cool weather. Plums and peaches are beginning to come forward, in addition to apricots, and next week will witness a good deal of activity in fruit shipping. Prospects for prices on all shipping fruit are good for this season. The recent rain did little harm to fruit here, but no more is wanted just now. Trees are in fine condition and it will take a great deal of hot weather to hurt apricots.

THE ARMY WORM.—Woodland Democrat: The Army worm appears to be traveling west and has reached the cemetery. So far as we have been able to learn, its devastations have been confined to Woodland lawns.

PLANTING BEANS INSTEAD OF WHEAT. — Woodland Democrat: Sam Montgomery has engaged in the bean business. He has leased 200 acres of what is known as the Merkeley farm, about 4 miles east of the Nelson bridge, on Cache creek. He is planting 190 acres to beans and 10 acres to popcorn. The seed beans cost 6 cents a pound. He says he can sell the beans at 2 cents and make more money than if he put the land in wheat.

YUBA.

THE GIBLIN CHERRY CROP.—Marysville Democrat: The Giblin Bros. of Yuba City state that their large cherry crop was purchased by the Sacramento cannery at 4 cents per pound for the black and 5 cents for the white fruit, nearly all of the crop being of the white variety. These prices were for delivery on the platform at the Yuba City depot.

THE HOME CIRCLE.

The Old Home on the Hill.

There are voices ever singing of the loved
and long ago,
And the sweetness of the music makes us
glad to have it so.
But when memory holds me captive and
my thoughts run as they will,
They revert with childish fondness to the
old home on the hill.

I can see the tree tops waver, as the
breezes linger low,
While the sunshine pales in glory to the
mystic afterglow,
And the shadows hang so deeply in the
streamlet by the mill,
As the moon spreads forth her grandeur
o'er the old home on the hill.

I can recollect emotions, thrills of joy and
pulse of pain,
That my heart was keen in knowing, as
they flooded through my brain.
But the love lights shimmer richly, like
the tide that's never still,
Shedding beams of endless halo 'round
the old home on the hill.

I am sailing o'er life's ocean with my
Leader in command,
And he'll guide me when he pleases to my
own, my native land.
But my frail heart often longeth, while
mine eyes with rainbows fill,
For another happy meeting in the old
home on the hill.

Romance of an Amateur Milkmaid.

The young man with the milk pail in his hand went out of the room and as the door closed behind him Judith turned towards her mother and sister with fierce indignation in her brown eyes.

"I wish you wouldn't do that, mother," she said in a low voice. "It is perfectly horrid to ask a visitor to milk the cow. You know father will be home in half an hour and he can do it then just as well as not. Ever since John Harwood has been coming here you and Sylvia have seemed to want to make a hired man of him, getting him to bring in wood and do errands and milk. Father, too, always keeps out of the way Wednesday afternoon so as to get out of doing all the work he can. I feel ashamed to look people in the face."

"There, that will do," said Mrs. Simmons, sternly. "I guess John isn't too good to help us a little.

"But he has his own work to do before he comes here."

"Well," said Sylvia, with a simper, he seems to like to come just the same. How many times has he been here to supper in the last two months?"

"And to-day," Judith said hotly, "of all times, when he is going to take Sylvia to that dance, and has come with his best clothes on."

"Well, we gave him your father's overalls and frock to wear, didn't we?"

"You are altogether too particular," said Sylvia, contemptuously. "Don't you know that if you get folks to do things for you it makes them like you all the better? And, besides, it isn't any of your affair, so you needn't get so excited about it. He doesn't do these things for you, so you can forget all about it," then Sylvia laughed rather unpleasantly.

When a little latter John Harwood came in with the milk, Sylvia, with a sweet smile, went forward and took the pail from his hand. "So good of you," she murmured.

She carried the pail into the pantry. "Here, Judith," she said, "can't you strain the milk? Don't make me stand here holding it all night." She did not know it, but the young man heard what she said.

At supper time Mrs. Simmons passed the cake to the guest. "Sylvia made it," she said, with a fond glance at her eldest daughter.

"Indeed," responded John, "and did she make that delicious bread?"

"No," answered his hostess, a little shortly, "Judith made that."

"Now if you will go in the sitting room and wait a little while, I will be all ready," said Sylvia, when they arose from the table. "If you can help me, mamma, it won't take so long."

Thus Judith was left alone with the dishes. When she was alone it was her habit to sing to herself. So forgetting all about John Harwood, she was soon singing happily about her work.

Suddenly a strong bass voice joined in. She looked quickly toward the sitting room, but no one was in sight, so, with only a slight hesitation, she resumed her singing, feeling a thrill of delight as her clear soprano was supported by that vigorous bass.

When the song was ended John appeared at the door. He looked at Judith with interest.

I did not know you could sing," he said.

"I don't think you know it now," she said, depreciatingly. "I just hum a little to myself once in awhile, but the others don't like to hear it."

"You should not disparage your ability. I took a few lessons once, but if I'd had as good a voice as you I would not have given it up."

"I wish I could take lessons, but I never had time, I know I don't do it right, and that is why I never want any one to hear me. I forgot you were listening."

Just then Sylvia appeared.

Judith was left with her dish-washing. Once she passed the back of her hand across her eyes and the hand was quite wet.

It was the next Wednesday but one, and Sylvia, her mother and John Harwood were in the sitting room. Judith was getting supper in the kitchen. When it was half-past five she went out into the back room and put on an old black calico skirt, a jacket of antiquated fashion and upon her head a huge sweeping cap.

Then taking the milk pail and lantern, went out to the barn. "There'll be time for me to get through before he starts out, and I can get these things off. I should hate to be seen in such regimentals."

Fifteen minutes later John Harwood went to the barn. Sylvia and her mother failed to find the milk pail, so he had taken the next best thing, a large tin pail, with straight sides and no strainer. The lantern was missing, also, but he said he could manage without it.

When he got to the barn he saw, in the light cast by the lantern, a grotesque figure seated beside the cow.

"What are you doing?" he asked as soon as he had recovered from his first surprise.

"Milking," was the brief answer.

He listened for a moment. "I—I beg your pardon," he then said, "but you are not milking, you know—and you are crying."

She sprang to her feet and faced him. The pail fell with a clatter and the cow kicked spasmodically.

"Of course I'm crying," she sobbed. "Who wouldn't cry to find they hadn't wit enough to milk a horrid old cow? And—and she kicked me over three times. Why, Mr. Harwood, what are you doing?"

"I am just putting my arm about you, and as it is going to stay there for awhile, you needn't look so horrified. First let me get my handkerchief and wipe away those tears—that is better. Now, I want to know why you were trying to milk that cow?"

"Because I hated having you to do it, and I couldn't stand it any longer."

"But I don't mind doing it."

"Well, I do mind having you. Now, please let me go, or you will be late for that party."

"What party?"

"Why over at Upham Center. Aren't you going to take Sylvia?"

"No, I am not. I did think of it, but as long as I did not say anything to her about it I am not going. Not that I should feel obliged to go, even if I had said anything—now. Do you want to know what I am going to do this evening?"

"Yes."

"I am going to stay and visit you. And before I go home you are going to promise to marry me."

"Why—why, John! I thought—I have been trying all the time to think of you as a brother-in-law."

"Trying, Judith?"

"Yes, because—oh, John, don't make me say it."

"And Judith," said John, "I believe I have loved you all the time, only you have been so shy and reserved that I didn't know it."

The cow stirred uneasily. Judith gave a happy little laugh. "Oh, John," she said, "aren't you ever going to milk that cow?"

"Yes I am. And, what is more, I am going to milk her every time I come here, and I am coming oftener now. So if you feel very badly about it, you can set the day just as soon as you like."

"Perhaps I shall learn to milk, yet," she called back as she went hurrying to the house. She took off her skirt and jacket and went to look after the neglected supper.

"You are getting awfully careless," her mother complained. "A little more and that water would have gone on my foot."

"I should think you were crazy," said Sylvia, a little later. "You go flying around, singing some idiotic song, and what under the sun you have that hideous sweeping cap on your head for is more than I can see."

Judith put up her hand and snatched it off, coloring guiltily.

"Seems to me it takes John forever to milk to-night. We'll be late for the party if we don't look out," Sylvia said, crossly.

"And Judith is late about supper, too, said Mrs. Simmons. "I think you had better put on your dress before supper. It will take longer being a new one, but I will help you."

When they were seated at the table Sylvia looked very pretty in her smart new gown but, somehow, she could not get a glance from John. When his eyes were not on Judith they were on his plate.

Supper being soon finished, John stepped to Judith's side.

"Sylvia," he said. Sylvia colored slightly; he did not often call her by her first name. "Sylvia, can't you do the dishes to-night? Judith and I are going into the parlor. You see we have rather a good deal to say to each other, being just engaged."—Susan Brown Robbins in Chicago Herald.

Queer Facts.

The only town in a civilized country which is ruled and managed entirely by colored men is Eatonville, in Orange county, Florida.

The distinction among animals of requiring least sleep belongs to the elephant. In spite of its capacity for hard work, the elephant seldom if ever sleeps more than four or occasionally five hours.

England's Australasian colonies (New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania and New Zealand) increased in population 266% between 1861 and 1898.

The blood is a colorless liquid, in which little red globules are floating. Every drop of it contains about 1,000,000 of the globules, and they are susceptible of division into smaller globules still.

The Danube flows through countries in which fifty-two languages and dialects are spoken. It is 2000 miles in length, and bears on its current four-fifths of the commerce of eastern Europe.

Among its many curious products, South Africa includes the sneezewood tree, which takes its name from the fact that one cannot cut it with a saw without sneezing, as the fine dust has exactly the effect of snuff.

Teacher—"Now, Tommy, suppose you had two apples, and you gave another boy his choice of them, you would tell him to take the bigger one, wouldn't you?" Tommy—"No, mum." Teacher—"Why?" Tommy—"Cos 'twouldn't be necessary."

It Isn't the Thing You Do.

It isn't the thing you do, dear;
It's the thing you leave undone
That gives you a bit of heartache
At the setting of the sun.
The tender word forgotten,
The letter you did not write,
The flowers you did not send, dear,
Are your haunting ghosts to-night.
The stone you might have lifted
Out of a brother's way,
The bit of heartsome counsel
You were hurried too much to say.
The loving touch of the hand, dear,
The gentle, winning tone
Which you had no time or thought for
With trouble enough of your own.
These little acts of kindness
So easily out of mind;
These chances to be angels
Which we poor mortals find.
It isn't the thing you do, dear,
It's the thing you leave undone
Which gives you a bit of a heartache
At the setting of the sun.

—Margaret E. Sangster.

From the Enemy's Line.

"Teddy" Wilkins, Sergeant, was lying on his breast behind a heap of earth listening to the zip of Mauser bullets over his head. The Spanish picket line was sheltered by a group of trees not far away, and occasionally a guerilla sharpshooter sent a message of defiance from the high branches.

The sergeant belonged to a New York regiment which had hurried to the front almost before Congress had officially declared that the United States was at war with the proud old land which had taken the trouble to discover her.

Three or four of the guerillas had dropped from the trees and the Spanish stragglers had been driven back toward Santiago by a rattling fire from the Springfield rifles of the volunteers. The weather was entirely too hot to follow up an advantage gained over a few rice fed conscrips, and Company K was resting a bit and wondering if the commissary department would call upon them that day.

"Teddy" Wilkins was smoking the artistically colored meerschaum which he had brought from home. There had been no tobacco in the rich brown bowl for days, and the sergeant was contentedly puffing at some of the dried grass of the country.

"Hello!" exclaimed De Jones. "Here they come to our pink tea! I wonder how they found out we were receiving this afternoon. Get out the Boston wafers, Sarg., and I'll hunt up the souvenir spoons."

"They" proved to be a slender young

FOR CHILDREN

Nothing, that comes in a bottle, is more important for children than Scott's emulsion of cod-liver oil. And "important" means that it keeps them in even health, on the highest plane of physical life.

"Do they live on it then?"

No; they don't touch it, except when they need it.

"When do they need it?"

Whenever they show, in whatever way, the least disturbance of even balance of health. It is not for acute diseases, with some exceptions; it is for a slight falling off from first-rate condition.

It is to be used as a food, whenever their usual food does not quite answer the purpose of food.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

woman, who walked with a springy step, and an elderly woman who was anything but sylphlike, who seemed to roll along the brown earth. There was a look of terror in the eyes of both of them. They advanced toward the American soldiers and held their hands above their heads.

"Mercy, mercy, Senor!" cried the girl, in broken English.

"Tell them to sit down on the sofa and make themselves at home," suggested De Jones. "The young one is rather good looking, at that."

Sergeant Theodore Wilkins of Company K bent his stiffened limbs, adjusted his cartridge belt, and went to meet the newcomers.

"We beg protection," said the younger woman. "We have come from the city, and we beg to be spared by the chivalry of los Americanos."

Wilkins, who remembered somewhat of his Ollendorf, attempted to say something in Spanish which he meant to be reassuring. The girl shook her head and a puzzled expression came into her eyes.

"Do not spik a Spanish more, Senor," she said. "I have the English very well. I went to school in Connecticut."

Whereupon the men who had been engaged in the gentle occupation of exchanging compliments with Spanish foemen burst into an uproarious guffaw, to the great annoyance of Sergeant Theodore Wilkins.

"That Spanish of yours is great," suggested the corporal.

A lieutenant came up just then. The two women said that they had just come from beleaguered Santiago in order that they might escape death in the bombardment which was sure to come. The lieutenant told them that they need fear no danger, for "los Americanos" did not make war upon women and children. He order Sergeant Wilkins and a guard of two men to escort the visitors out of harm's way.

Teddy Wilkins was young. He was so youthful that he had had hard work in getting into the regiment when he enlisted about a year before. He had been educated in a military school, and the mechanism of drill seemed a second nature to him.

He remembered as he escorted the refugees through the chaparral that there was a situation in a grand opera which was not so very different from the one in which he found himself. He wondered if Carmen were as beautiful as the Cuban girl who picked her way among the fallen branches and the stones which lay in their pathway. Then he tried to convince himself that he knew a girl in Harlem who was far more so. The more he advanced this proposition, to himself, the more was he convinced that it was utterly untenable.

"Senor," said the girl, "you are kind. You are—our valiant knight."

Teddy Wilkins' youth often caused him to speak hastily. He glanced at the young woman's mother, and being convinced by her look of entire stolidity that the duenna did not understand English, he remarked, in a low and supposedly tender voice, "I wish that you would say 'my' instead of 'our' senorita. I should be happy if you did."

The young woman laughed and then checked herself.

"Ah, senor," she said, I have left those behind who were dear to me. I think only of being reunited to them."

"Let me go in search of them," exclaimed the young sergeant. "I will go everywhere to find them in order to win even a smile from you."

"Senor," responded the young woman, "there is nothing in our Spanish tongue to describe one so noble. You are indeed a Sir Galahad. They came with us and were frightened from us. I have no doubt that they have succeeded in also placing themselves in the protection of los Americanos. Such is my earnest hope."

The girl stepped back in a coquettish way so that the young sergeant might walk beside her. The more he talked with her the more he was convinced that she was hiding a great sorrow. There were lines in the classical forehead which showed that the young woman was more worried about the safety of those whom she had left behind than she would tell even the sympathetic sergeant.

Sergeant Wilkins as he walked along felt a violent attack of jealousy.

"Your sweetheart, perhaps," he suggested. The girl shook her head.

"Alas, Senor," she said, "not so. If it were a few years ago I could truthfully answer yes."

The sergeant was sorry, but at last they reached the rear. The young woman and her mother were taken under the protection of a branch of the Red Cross. The sergeant remained near them as long as he could, and then reluctantly started back to the front.

"Perhaps we shall meet again," said the girl, just before he went away.

"You give me great hope," replied Teddy Wilkins. "If I can ever be of service to you, no matter where you may be, you must let me know."

The girl smiled and said that she would never forget him. The young sergeant touched his cap and with one last, lingering glance he went his way. He was so preoccupied on the way back that the soldiers with him exchanged sly winks and assumed expressions intended to be exceedingly lovelorn.

Sergeant Theodore Wilkins found little time that night to think of the fair senorita. The Spaniards advanced and it took all the vigor of the exhausted volunteers to hold them in check. Yet even when the Mausers filled the air with weird songs there came to Teddy Wilkins the vision of a face framed in dark hair and the sound of a voice which was musical and low.

Days of hard fighting followed and when it was all over Sergeant Theodore Wilkins went in search of her who had called him a Sir Galahad. He found her, too, within the protection of the American lines, sheltered by the Red Cross, and happy because she had been reunited with her own—her husband and her four children.—New York Herald.

Fashion Notes.

It is strongly hinted that low-necked effects will be popular later in the season, in conjunction with elbow sleeves. Plain Japanese silks are in high favor for shirt waists, and are usually trimmed with groups of tucks. Insertions are occasionally used, but the simpler trimming is preferred, as a rule.

A feature of dress this season which the woman with a pretty throat cannot afford to ignore is the chokerless bodice, cut out just below the collar band, either round or square.

The sweetest wedding gown imaginable is being made for an early June wedding. It is white Liberty satin, made with a deep shaped flounce of deep duchess lace in a festooned design. At the upper part of each wreathlike section is a rosette of white chiffon, and a ruching of white chiffon finishes the hem. The bodice is arranged in tiny tucks, slanting upward to form a bolero effect, the plain part blousing a little to suggest a vest. Beneath the elbow sleeves are undersleeves of white chiffon, with bands of lace insertion.

A satin foulard, a brown figure on white, the brown outlined with black, makes up into an effective frock and lends itself well to decorative effects. There is a pretty combination of cream and white and black, with little French knots of blue to brighten the whole. The collar of the gown is of white tucked silk mousseline, upon which is a pattern of heavy cream lace, and at the upper edge a soft fold of the muslin knotted with French knots of pale blue. This is the stock from which a narrow plaited vest of cream batiste is carried down to the waist, outlined on either side by bands of black taffeta.

A pretty model for dimity shows lace-edged ruffles, a tucked bodice, with valenciennes lace insertion set in between the groups of tucks to form a yoke. A blouse model for wool material is tucked crosswise and completed with a vest of white cloth, embroidered with black and silver. Twine-colored lace over white chiffon forms the vest.

A noticeable feature of the summer gowns is the general adoption of a sensible length—not really short, but just short enough to swing clear of the ground in walking. The length is uniform all around. This applies, of course, to skirts for morning and street, not dressy wear. It certainly is a long step toward economy, as the longer the skirt the longer the laundress's and cleaner's bills.

Tucking continues to hold its conspicuous position in the fashionable wardrobe, and is seen in linen, chiffon, mousseline, mull and other transparent and delicate fabrics, as well as in taffeta.

A black taffeta jacket which is most attractive has more of these broad hand tucks tapering in at the waist as the jacket, which is fitted, tapers in. The tucks on this turn away from the front, on either side, and on the sleeves run diagonally across. There are little plaited coat tails in the back trimmed with cord effects on either side with two little crocheted buttons in each one. There is a belt of the taffeta stitched and pointed up and down in the back coming around and fastening in the front. The jacket is lined with white satin.

For the summer wide-brimmed hats will be worn extensively, the "Maud Muller" holding a prominent place. These hats are trimmed low generally with a wreath of flowers falling carelessly on the brim and carried around a low crown. A pretty one is of fancy white straw, encircled by a wreath of white poppies shot with gray and green; another, in Manila straw, has a garland of cherries, and a third, of white straw, has a quilling of black tulle, relieved by a windmill bow of cerise velvet at the left side. Toques entirely composed of flowers continue to find favor. A pretty example is carried out in cerise geraniums and their foliage.—N. Y. Tribune.

DOMESTIC ECONOMY.

Hints to Housekeepers.

To make cheese balls, fold into the stiffly beaten whites of two eggs a half cupful of grated American cheese. Season with paprika and salt, mould into small balls, and fry in deep fat for five minutes. Serve in a napkin on a hot dish.

To clean duchesse, point or any real lace, wash it carefully in tepid water with a fine soap, rinse it and pin it while wet on a board covered with flannel. Never touch it with an iron. Very small pins, and plenty of them, should be employed, and great care should be used to keep the pattern true and even, fastening the various parts in place with the pins. If the lace becomes dry before it is pinned, moisten it with a damp sponge. Let the lace dry thoroughly before removing it. To dry a length of lace, a wooden cylinder is best. By careful handling and keeping the damp portion in a wet napkin while the rest is drying around the wood, it may be made to look as good as new.

Lobster salad arranged in a ring of pale green jelly makes a pretty dish for the luncheon or dinner table. To make the jelly, boil six or seven stalks of green celery in three cupfuls of water, and add two green onions, one-half of a bayleaf, a whole clove, a small blade of mace, a tablespoonful each of chopped chervil and parsley, a level teaspoonful of salt and a dash of paprika. Boil slowly half an hour and then add half an ounce of gelatine which has been soaked until soft in two tablespoonfuls of cold water. Strain it through a jelly bag, and, when partly cool, color a faint green with any of the standard colorings to be found in the stores. Place a small fluted bowl exactly in the middle of a larger one, and turn the liquid into the space between the two, to a depth of about two inches. Stand away until it is firm. When it is wanted, pour a little hot water in the small bowl, give it a turn and remove it. Wrap a cloth dipped in hot water around the large bowl, and turn it bottom side up on a round, flat dish. Then remove the bowl. Line the inside of the ring with white lettuce leaves, and fill it with a mixture of diced lobster, celery, chopped olives and mayonnaise. Dot stoned olives about the top of the ring and decorate the salad with white celery tops.

Domestic Hints.

Grouse.—Remove head, wings and entrails; wipe, tie feet to tail, dredge with flour, cover breast and legs with thin, fat pork, and bake twenty minutes in hot oven. Serve in a bed of bread sauce, and sprinkle fried crumbs over the whole.

Blackberry Jam. — Allow equal weight of sugar and berries. Mash half of the berries, and sift all but the seeds through a fine sieve. Add the remainder of the berries, mashed but not sifted, and simmer half an hour, stirring frequently. Add sugar and boil five minutes. Turn into small jars and seal when cold.

Sauce Piquante for Shad.—Have six tablespoonfuls of melted butter, add to it three tablespoonfuls of lemon juice, and then thicken as it heats, not boils, with two egg yolks. Add a teaspoonful or so of chopped sweet Spanish peppers or pimentos, and just half a dozen small pieces of fresh green pepper. Strain the sauce before serving.

Bread Pudding.—To make "bread pudding" with oranges, take a pint of grated bread crumbs and soak them in one and one-half pints of milk; add one well-beaten egg, one-quarter of a cup of sugar, and butter the size of a walnut. Pour about two-thirds of the mixture into a buttered pudding dish, and on top lay a cupful of sliced oranges. Add the rest of the pudding and bake in a moderate oven.

Frozen Fruits.—Boil two cups sugar and one quart water twenty minutes, skim and cool. Add two to three pints mashed and sifted pulp and juice of any fruit or mixture of fruits you prefer, like peaches, plums and apricots. Freeze as usual, and, if you prefer, add when partly frozen one pint cream, whipped. Some fruits will need more sugar, others will be improved with lemon juice.

Fruit Custard.—A delicious "fruit custard" may be made by boiling one quart of milk in a double boiler. Beat two eggs very light and stir into them four tablespoonfuls of sugar and one tablespoonful of flour. Add to this a little cold milk, then stir it gradually into the boiling milk, stirring until it thickens; set it away to cool. When cool, flavor with vanilla. Have ready in sauce dishes strawberries or sliced oranges, or any fruit in season, and pour the custard over it. This is a very simple and palatable dessert.

Salmon Loaf.—One can of salmon; drain, pick out bones and chop fine; one-half cupful of bread crumbs, yolks of four eggs, well beaten; season with salt, cayenne pepper and parsley. Mix thoroughly together and add the well-beaten whites of the eggs last. Put in a mould and steam one hour. Garnish with lemon and parsley. Sauce—cook together one cupful of cream, one tablespoonful of cornstarch, two tablespoonfuls of butter, one egg, one tablespoonful of anchovy and one of tomatoes, a pinch of mace, cayenne and a little parsley.

Humorous.

Johnny—"Why do they say that the pen is mightier than the sword?" His Father—"Because you can't sign checks with a sword."

"You say you shook him because he was a bad egg. How did you find it out?" "Oh! why he showed it the moment he was broke."

Youngchap—"How does it happen that your hair is so much grayer than your whiskers?" Oldboy—"My hair is so much older, you know."

Tommy—"Father, didn't you say we had a new baby!" Father—"Yes, my son, why?" Tommy (in a tone of conviction)—"Well, you've been regularly taken in. It's as old as anything—quite bald, and not a tooth in its head."

S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 29, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday	73¾@74¼	72⅞@73¾
Thursday	73⅝@74⅝	72⅞@74
Friday	74⅛@73⅛	73⅜@72¾
Saturday	73⅛@73⅝	72¾@73⅛
Monday	73¾@74	72⅝@73⅝
Tuesday	—@—	73⅜@74

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday	5s 11⅜d	5s 10⅜d
Thursday	5s 11¼d	5s 10⅜d
Friday	5s 11 d	5s 10⅛d
Saturday	*-s —d	-s —d
Monday	*-s —d	-s —d
Tuesday	-s —d	-s —d

*Holiday.

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday	—@—	1 03⅝@1 02⅞
Friday	—@—	1 03 @1 03⅛
Saturday	—@—	1 03 @—
Monday	—@—	1 03¼@1 03¾
Tuesday	98 @—	1 03⅜@1 03¾
Wednesday	—@—	—@—

WHEAT.

Much the same inactive condition has prevailed in the local wheat market the past week as for some time preceding. The outward movement continues light, but it is about all that could be expected, considering the very limited supply of ships in port available or suitable for grain loading. There are in harbor at this writing only thirteen deep sea ships, and but one of these disengaged, the others being chartered for grain. The quantity of ocean tonnage headed this way is about 20 per cent lighter than last year, and now represents of steamers and sailing ships a carrying capacity of about 250,000 tons, but this will likely be considerably increased through tramp steamers turning up from unexpected quarters. More of these steamships can be reasonably looked for the coming season than put in an appearance the past year, as there will be, according to immediate indications, much less outside and extraordinary demand for steam tonnage, such as Government requirements of this and European countries. Only through lower ocean freight rates can any special relief to wheat be looked for in this market. There was a further decided decrease the past week in the United States visible supply east of the Rockies, the quantity being now given at 40,064,000 bushels, being 2,424,000 bushels less than a week ago.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 98@—c.

December, 1901, delivery, $1.02⅞@1.03¾.

Wednesday, at regular noon session of Call Board, May, 1901, wheat sold at 98c; December, 1901, $1.03⅜@1.03¾.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	97½@	98¾
Oregon Valley	1 00	@1 02½
Washington Blue Stem	1 00	@1 05
Washington Club	98¾@1 02½	
Off qualities wheat	95 @	97½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s1d@6s2d	6s1½d@6s2d
Freight rates	38¾@40s	36¼@37½s
Local market	$0 90@93¾	$0 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Trade is of light proportions, and the market is lacking in firmness. Quotable values remain as before, but transfers at full figures are the exception. Although the quantity on hand is not especially heavy, there is much more flour being offered for sale than can be immediately placed at the prevailing rates.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

Further shading in values has been experienced in the market for feed descriptions since last review, the quotable decline being about 25c. per ton. This is more due to the timidity and exceedingly light operations of buyers than to any undue pressure to realize. No great quantities are coming forward from interior points, but despite the comparatively limited offerings, the supply is in excess of immediate requirements. With a new crop near at hand which gives promise of being of fair proportions, dealers are as a rule buying only as compelled by present necessities. In brewing grades there is scarcely anything doing at this date, values remaining nominally as for some weeks past, with quite limited spot stocks of this sort.

Feed, No. 1 to choice	76¼@	77½
Feed, fair to good	75 @	76¼
Brewing, No. 1 to choice	82½@	85
Chevalier, No. 1 to choice	—@—	
Chevalier, No. 2	—@—	
Chevalier, poor	—@—	

OATS.

Asking rates for this cereal remain at practically the same high range as previously noted, supplies being light and in few hands. The demand is also decidedly limited at prevailing values. That there will be a pronounced decline in prices when new crop begins to come forward, or in about sixty days, is altogether probable.

White Oats, fancy feed	1 45	@1 50
White, good to choice	1 35	@1 42½
White, poor to fair	1 25	@1 32½
Gray, common to choice	1 30	@1 42½
Milling	1 42½@1 50	
Surprise, good to choice	1 45	@1 52½
Black Russian	1 12½@1 30	
Red	1 30	@1 45

CORN.

Seldom has the market been so poorly supplied as at present. Outside of a few very small lots of Yellow, there is no domestic offering. Eastern is in scanty stock, and there are no indications that there will be very soon any marked changes in quotations, although tendency is to more ease.

Large White, good to choice	1 40	@—
Large Yellow	1 40	@—
Small Yellow	1 55	@1 60
Eastern, in bulk (carload lots)	1 25	@—

RYE.

Market is exceedingly quiet and without quotable improvement. In a wholesale way there is virtually nothing doing.

Good to choice, new	80 @	82½

BUCKWHEAT.

Values are nominally as last quoted. There is none arriving from any quarter and no special inquiry.

Good to choice	1 85	@2 00

BEANS.

Very few of any sort arriving, and stocks in store are of most kinds of quite small proportions. Especially are Small White and Pea beans, Reds and Limas, in very scanty supply, and must continue so until next season opens. Prices for all white varieties and Limas, as also most kinds of colored, remain firm. Pinks are the easiest on the list, being in largest stock, with Bayos next. There are few Horse beans on market, neither is there any noteworthy inquiry for them at this date.

Pea, fair to good, 100 lbs	4 75	@5 00
Small White, good to choice	4 75	@4 90
Lady Washington	4 00	@4 15
Butter	5 00	@6 00
Pinks	1 40	@1 65
Bayos, good to choice	2 25	@2 50
Reds	3 00	@3 25
Red Kidney	4 25	@4 50
Limas, good to choice	6 25	@6 40
Black-eye Beans	2 75	@3 00
Horse Beans	1 00	@1 25
Garhanzos, large	2 00	@2 25
Garhanzos, small	1 25	@1 75

DRIED PEAS.

Nothing new to record. Spot supplies are almost wholly in the hands of millers and small jobbers and are being steadily held.

Green Peas, California	2 65	@2 80
Niles Peas	1 60	@1 75

WOOL.

Market cannot be termed active, but offerings are not by any means neglected. There are not many bright and free wools, suitable for shipment in the grease, new being offered in this center. Such readily command full current rates. Heavy and defective wools, which have to depend on scourers for an outlet, are being taken about as fast as they can be advantageously handled. Values are ruling steady, and that there will be any noteworthy changes during the balance of the season is not probable.

SPRING.

Humboldt and Mendocino	15	@16
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	15	@16
Oregon Valley, coarse to medium	14	@15
Eastern Oregon, choice	12	@14
Eastern Oregon, fair to good	9	@11
Nevada, as to condition	10	@12

FALL.

Humboldt and Mendocino	11	@12
Middle County	8	@ 9
San Joaquin	7	@ 8

HOPS.

There is nothing doing, the wholesale market being bare of offerings and quotations for the time being are wholly nominal. On new to arrive buyers and growers are apart in their views, with 10@12c bid for choice, but these figures are not accepted.

Good to choice 1900 crop	13½@16	

HAY AND STRAW.

Values for old hay are ruling tolerably steady, under moderate arrivals. Not much new has yet come forward. Some new volunteer Wheat and Oat mixed, of good average quality, went at $8. Stained volunteer hay is selling at $6@7. Straw is in light receipt and quotably unchanged.

Wheat	8 00@13 00
Wheat and Oat	8 00@12 00
Oat	7 00@10 50
Barley	6 00@ 8 00
Volunteer	5 00@ 8 00
Alfalfa	7 00@ 9 00
Stock	5 00@ 7 00
Compressed	8 00@12 00
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

Market is a little better supplied with Bran than for some weeks past, but is not any lower. Middlings and Shorts are without appreciable change, offerings and demand being both of light proportions. Market for Rolled Barley is weak. Milled Corn is in light stock and very firmly held.

Bran, ₱ ton	17 00@18 00
Middlings	17 50@20 00
Shorts, Oregon	17 00@18 00
Barley, Rolled	17 50@18 00
Cornmeal	28 00@—
Cracked Corn	29 00@—

SEEDS.

An inactive market at nominally unchanged values. There is no Mustard on market, and very little seed of any kind herewith quoted. Indications, according to latest advices, are for a very fair crop of Mustard this season.

	Per ctl.
Mustard, Trieste	—@—
Mustard, Yellow	—@—
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Prices for Grain Bags have been further advanced, with stocks in the main in comparatively very few hands. As to the future, there is nothing definite. Deliveries will soon be made on June-July contracts, and much will depend on how rapidly bags move into the interior. For the past week or two there has been a very good demand from grain growing sections.

Calcutta Grain Bags, buyer June-July	7½@—
Calcutta Grain Bags, spot	7½@—
San Francisco Grain Bags, 22x36, spot	7⅜@ 7½
State Prison Bags in lots of 2000, ₱ 100	—@—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

Business doing in this department is at generally unchanged values. Hides and Pelts are in fair request at current rates. Tallow moves into second hands about as rapidly as it arrives.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	9½@10	8 @8½
Medium Steers, 48 to 56 lbs	8½@ 9	7 @7½
Light Steers, under 48 lbs	8 @ 8½	6½@7
Heavy Cow Hides, over 50 lbs	8½@ 9	7 @7½
Light Cow Hides, under 50 lbs	8 @ 8½	6½@7
Wet Salted Kip	9 @ 9½	7 @7½
Wet Salted Veal	9½@10	7½@8
Wet Salted Calf	10 @—	9 @—
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	80	@1 00
Pelts, medium, ₱ skin	60	@ 75
Pelts, short wool, ₱ skin	30	@ 55
Pelts, shearling, ₱ skin	10	@ 30
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3	@ 3¼
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

While offerings are not heavy, they are on the increase. The market lacks firmness, as is to be expected at the beginning of a new season, with the yield much better than for several years past. In a wholesale way, bids over inside quotations are difficult to obtain.

Extracted, White Liquid	5	@ 6
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3½@ 4	
White Comb, 1 lb frames	11½@12½	
Amber Comb	9	@10
Dark Comb	6	@ 8

BEESWAX.

Market continues to be lightly stocked, but there is likelihood of increased supplies and easier prices in the near future.

Fol Nuts

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

Beef is in fair supply and in moderate request at prevailing rates, which are quotably the same as at date of last issue. Mutton is in ample stock for the current demand, with values fairly steady. Veal was not in heavy receipt, but brought no better prices than have been ruling for several weeks past. Lamb sold at about same figures as preceding week, with very fair inquiry but market was easy in tone. Hogs were in more than sufficient supply for most pressing needs, and market lacked firmness, quotations being slightly lower.

Beef, first quality, dressed, net ₱ lb	7½@—	
Beef, second quality	7 @—	
Beef, third quality	6½@ 7	
Mutton—ewes, 6½@7½c; wethers	7 @ 8	
Hogs, hard grain fed, medium	6½@—	
Hogs, small, fat	6½@—	
Hogs, large, hard	5⅝@ 5¾	
Hogs, feeders	—@—	
Hogs, country dressed	7½@ 7¾	
Veal, small, ₱ lb	8 @ 9½	
Veal, large, ₱ lb	7½@ 8½	
Lamb, spring, ₱ lb	8½@—	

POULTRY.

Market was lightly stocked with choice young chickens, medium size to full grown, and such brought good prices, averaging better than preceding week. Old chickens which were large and fat sold to fair advantage, but small and poor went at low figures. Turkeys continued to meet with a dragging and unsatisfactory market. Demand for Ducks and Geese was only moderate, and prices were without special change. Pigeon market was quiet and lacked firmness.

Turkeys, live hens, ₱ lb	10	@ 12
Turkeys, live gobblers, ₱ lb	9	@ 10
Hens, California, ₱ dozen	4 00	@5 50
Roosters, old	4 00	@4 50
Roosters, young (full-grown)	6 50	@7 50
Fryers	5 00	@5 50
Broilers, large	4 00	@5 00
Broilers, small	2 25	@2 75
Ducks, old, ₱ dozen	4 00	@4 50
Ducks, young, ₱ dozen	4 50	@5 50
Geese, ₱ pair	1 25	@1 50
Goslings, ₱ pair	1 50	@2 00
Pigeons, old, ₱ dozen	1 25	@1 50
Pigeons, young	1 25	@1 50

BUTTER.

For high grade fresh the market was moderately firm at the quotations, with no heavy offerings of this description, and prospects favorable for stiffer prices prevailing at an early day. Medium and lower grades are in ample supply and market for these descriptions favors buyers.

Creamery, extras, ₱ lb	17½@18
Creamery, firsts	16½@17
Creamery, seconds	— @—
Dairy, select	16½@17
Dairy, firsts	16 @16½
Dairy, seconds	— @—
Dairy, soft and weedy	— @—
Mixed store	12½@13½
Creamery in tubs	17 @19
Pickled Roll	— @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

Market is without noteworthy change since last review. Stocks of flats are fairly liberal and considerably ahead of immediate demand. Young Americas are in moderate supply, sufficient for the inquiry at full current rates.

California, fancy flat, new	8½@—
California, good to choice	8 @ 8½
California, fair to good	7½@ 8
California Cheddar	— @—
California, "Young Americas"	9½@10

EGGS.

Tendency is to a wider range of prices, the proportion of offerings of choice to select beginning to show decrease. A wider range of values is among the probabilities of the near future. The outlook for common qualities, however, is not encouraging.

California, select, large, white and fresh	15½@16
California, select, irregular color & size	14 @15
California, good to choice store	12½@13½

VEGETABLES.

While the market was somewhat irregular, taken as a whole, it was in better shape for the producing interest than during preceding week. Asparagus sold at a wider range, choice to select commanding improved figures. Peas of choice to select quality were in reduced receipt and brought good average prices. For String and Wax Beans of desirable quality, values ruled decidedly steady. Tomatoes were in rather heavy receipt from southern section and inclined in favor of buyers. Onion market was steady for good to choice Old Yellow, but weak and lower for New Red, latter arriving more freely.

Asparagus, ℔ box	50 @1 50
Beans, String, ℔ lb	3½@ 4½
Beans, Wax, ℔ lb	4½@ 5½
Cabbage, choice garden, ℔ 100 lbs	60 @ 70
Cauliflower, ℔ dozen	50 @ —
Corn, Green, ℔ doz	30 @ 50
Cucumbers, ℔ box	1 25 @1 50
Egg Plant, ℔ lb	10 @ 15
Garlic, ℔ lb	4 @ 6
Onions, Yellow Danver, ℔ cental	3 50 @4 00
Onions, Australian, ℔ cental	4 00 @4 50
Onions, New Cal. Red, ℔ cental	35 @ 60
Peas, Sweet garden, ℔ lb	2 @ 2½
Peas, good to choice, ℔ sack	1 25 @1 50
Peppers, Green Chile, ℔ lb	7 @ 10
Rhubarb, ℔ box	50 @ 75
Rhubarb, Mammoth, ℔ box	85 @1 00
Squash Summer, ℔ box	75 @1 00
Tomatoes, ℔ box	50 @ 75

POTATOES.

There were no heavy offerings of either old or new, and especially were good to choice new in limited receipt as compared with the demand. That there will be excessive supplies very soon is not probable. Old potatoes now offering are in the main of quite ordinary quality, and on this account move slowly. There is a limited inquiry for Old Burbanks for seed, but very small ones are not wanted, either for seed or cooking.

Burbanks, River, ℔ cental	85 @1 25
Burbanks, Petaluma-Tomales, ℔ ctl.	1 00 @1 30
Burbanks, Oregon, ℔ cental	1 30 @1 65
New Potatoes, ℔ cental	1 50 @2 10

The Fruit Market.

FRESH FRUITS.

Receipts of Summer fruits showed increase, but were not heavy in the aggregate for this time of year, and it was the exception where choice to select qualities met with other than a firm market. Cherries desirable for shipping or canning were in good request at full current rates. Some were forwarded in unripe condition and were salable only at low figures. Although the crop is light, poor stock is not sought after. Apples of last crop are hardly quotable, although still on market. Green Apples, as is to be expected at this early date, are not averaging well as to quality. Apricots were in fair receipt and offerings included less green and unripe fruit than preceding week. Peaches made a fair display as to quantity, but it was the exception where the quality was desirable. Strawberries were in reduced supply and market was firmer. Raspberries were more plentiful and market was easier. Blackberries ruled fairly steady. Loganberries are now arriving in quotable quantity, and are in very fair request.

Apples, green, ℔ box	40@ 65
Apricots, Pringle, ℔ box	75@ 1 00
Apricots, seedlings, ℔ box	1 00@ 1 25
Blackberries, ℔ crate	1 50@——
Cherries, Black, ℔ box	50@ 75
Cherries, Royal Anne, ℔ box	85@ 1 00
Cherries, Royal Anne, ℔ lb	8@ 9
Cherries, Black, ℔ lb	4@ 7
Cherries, White, ℔ box	30@ 60
Cherries, common White and Red, ℔ lb	2½@ 3½
Currants, ℔ chest	3 00@ 5 00
Gooseberries, common, ℔ lb	2½@ 3½
Logan Berries, ℔ drawer	35@ 50
Peaches, ℔ box	1 00@ 1 50
Raspberries, ℔ crate	75@ 1 00
Strawberries, Longworth, ℔ chest	7 00@10 00
Strawberries, Large, ℔ chest	4 00@ 6 00
Strawberries, Lorin, ℔ crate	1 00@ 1 50

DRIED FRUITS.

Aside from a moderate jobbing trade, mainly on local and Pacific coast account, there is very little business reported in cured and evaporated fruits. Evaporated apples are firm and higher, with stocks very light. There are few apricots now on market, and these are mostly under choice There is some speculative talk on new Apricots to arrive, at 8½@9½c. for choice Royals, but nothing beyond talk. Choice to select Pears are practically out of stock, and are likely to rule high the coming season. High-grade Peaches are not plentiful, but of fair to medium qualities there are more than there is immediate demand for. The Prune market shows no quotable improvement, being exceedingly quiet. Large holdings of 2c. Prunes are being offered at a moderate advance without eliciting wholesale custom. As the coming crop will be light, better prices for this fruit should prevail, both for carry over and new stock.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6 @ 6½
Apricots, Royal, choice, in sacks, ℔ lb	7 @ 7½
Apricots, Royal, fancy	—@—
Apricots, Moorpark	9 @10
Apples, in 50-lb boxes, rings, pressed, fancy	5½@ 6½
Apples, 50-lb boxes, rings, pressed, good to choice	3 @ 4
Figs, White, fancy pressed	6 @ 7
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5½@ 6
Peaches, unpeeled, choice	4 @ 4½
Peaches, peeled, in boxes	11 @14
Pears, unpeeled Bartletts, halved, fancy	5 @ 6
Pears, halved, unpeeled Bartletts	3 @ 4
Pears, quartered, unpeeled Bartletts	3 @ 4
Plums, Black, pitted	3½@ 4½
Plums, White and Red	4½@ 5½
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	4 @ 5
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	2 @ 3
Figs, White	2½@ 3½
Peaches, unpeeled	2 @ 3
Pears, prime halves	1½@ 2½

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

The market is without special change. The movement is light, and is mostly in 1-lb. carton seeded raisins at 5¼c. Some sugary loose Muscatel are going to mince-meat manufacturers at 3½c. Quotable values as fixed by the Growers' Association remain unaltered.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—
(Usual advance for fractions.)	
Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½
(Above prices for loose raisins are for 50-lb boxes.)	
Seeded Raisins, 1-lb packages, ℔ lb	5¼@—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9¼c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Orange market is tolerably firm for best qualities, such being in fair request, with offerings not particularly heavy. Lemon market continued favorable to buyers, supplies being liberal and inquiry not very brisk, in a great measure due to the cheap rates current on Limes.

Oranges—Navel, ℔ box	1 00@2 50
Seedlings, ℔ box	50@1 25
Valencias, ℔ box	1 50@2 35
Grape Fruit, ℔ box	75@1 50
Lemons—California, select, ℔ box	2 00@2 25
California, good to choice	1 50@1 75
California, common to fair	75@1 25
Limes—Mexican, ℔ box	4 00@4 50

NUTS.

Almonds are being firmly held, but there is not much doing in them at present. Market is practically bare of Walnuts, and is in good shape to receive coming crop. There is a moderate business doing in Peanuts at generally unchanged values.

California Almonds, shelled	18 @22
California Almonds, paper shell, ℔ lb	12 @14
California Almonds, soft shell	10 @12
California Almonds, hard shell	6 @ 7
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

The wholesale market is lifeless, for the substantial reason that there are practically no wines offering from or remaining in first hands. There is a decidedly firm tone, which bids fair to continue throughout the coming season. Values for dry wines of last season's vintage are quotable nominally at 22@25c. per gallon. There is a very fair outward movement, both by sea and rail, of stocks in second hands. The ship Iroquois, sailing the past week for New York, took as part cargo 4500 barrels wine.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	105,759	6,012,686	5,876,802
Wheat, centals	92,179	7,536,474	6,410,873
Barley, centals	45,335	3,526,797	4,932,528
Oats, centals	5,830	602,600	758,029
Corn, centals	280	104,570	137,526
Rye, centals	1,475	113,780	99,047
Beans, sacks	2,183	541,214	361,122
Potatoes, sacks	15,434	1,450,869	1,163,3'6
Onions, sacks	5,539	171,593	156,454
Hay, tons	3,091	151,449	144,715
Wool, bales	1,014	51,689	53,038
Hops, bales	...	8,234	10,452

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	90,360	3,526,744	3,965,474
Wheat, centals	118,977	7,172,830	5,630,132
Barley, centals	252	1,954,941	3,794,993
Oats, centals	...	49,101	45,123
Corn, centals	...	3,538	19,476
Beans, sacks	151	13,510	26,012
Hay, bales	200	86,169	134,174
Wool, pounds	...	1 044,291	4,324,433
Hops, pounds	391	561,796	1,063,777
Honey, cases	10	1,861	3,581
Potatoes, pack's	253	129,926	71,210

California Dried Fruit at New York.

NEW YORK, May 29.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Market quiet at nominally unchanged values; offerings are principally prunes and raisins.

Prunes, 3¼@7c.

Apricots, Royal, 7½@12c: Moorpark, 8½@14c.

Peaches, unpeeled, 5½@10c; peeled, 12½ @20c.

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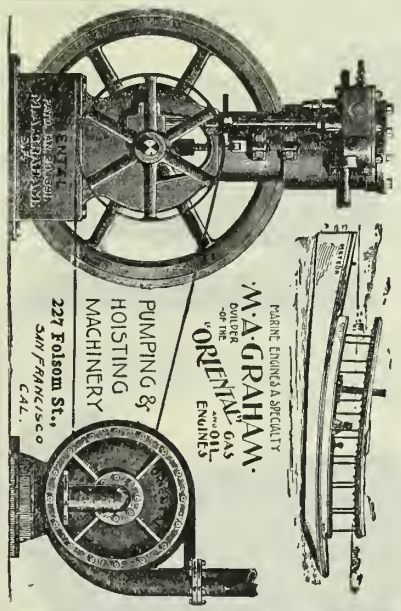

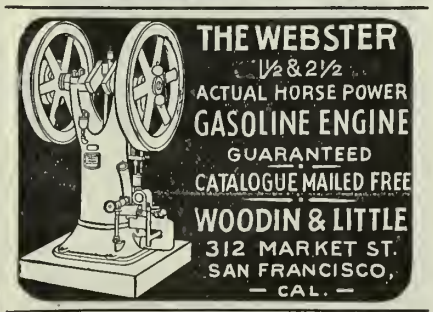

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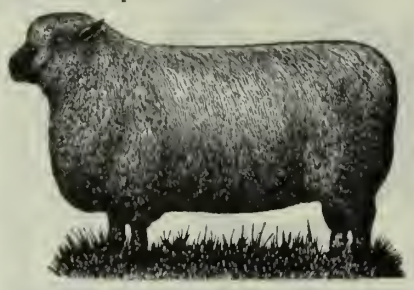

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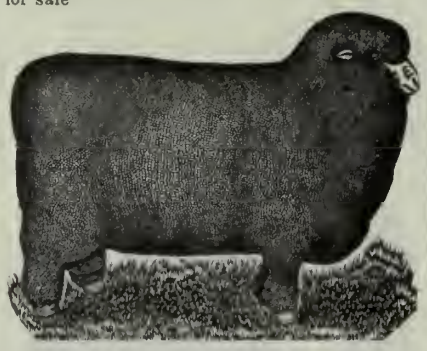

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FRUIT MARKETING.

Need of Organization in Farm Industry.

By W. P. LYON at the University Farmers' Institute at San Jose.

The tendency of the age is toward consolidation. In all lines of business large aggregations of capital are being organized into corporate combinations known as trusts. This tendency has of late culminated in the billion dollar steel trust, an enormous concern, made up by the consolidation of a dozen already enormous manufacturing corporations. Such a combination of capital as this would have frightened our forefathers out of their wits. Twenty years ago, even, it would have been considered impossible of accomplishment. To-day the business world accepts it—with great interest, it is true—and passes it along with expectation of seeing a greater trust in the near future. Even the silurian farmers take it as a matter of course, with scarcely a comment, and not a thought that the same self-interest which prompted the very large number of stockholders of the corporation to make up the big trust would be best subserved in their own case by organization and co-operation among themselves.

The reasons for the formation of these large corporations are many. The consolidation of individual, small and private concerns into one corporation saves time and much expense by placing the responsibility and care of operating the many small business houses upon one set of officers, thus relieving the many. One manager can settle the policy of all better than a manager for each concern, much more harmoniously and at a fraction of the cost. One secretary can keep the records of a big concern at the same cost as each of the secretaries of the small concerns. The large trusts are formed upon the basis that the interests of all who are employed in one line of business are identical; that the policy which is good for one is good for all, and can most readily be adhered to by organizing all who are engaged in that line of business into one central organization, which shall settle the policy for all its members.

To PREVENT COMPETITION.—This centralization of power prevents ruinous competition among those in the same line of business by harmonizing them, and at the same time lower prices are made possible by reason of the decreased cost of production. The selfishness of the individual has less opportunity to act because his self-interest is lost in the interest of all, thus broadening and liberalizing the individual, making less of personal strife and contention and drawing competitors closer together. In consequence there is a much steadier element imparted to business and much of the danger of financial panics is done away with.

In England the co-operative system among farmers has reached a degree of completeness which is not likely to be seen in a younger country. While a country is new and sparsely settled it is much more difficult to organize its inhabitants into any kind of an association than where the same old families and their descendants have been neighbors for centuries and live within a stone's throw of each other. There they have become used to each other's ways, and while neighborhood differences and jealousies exist, they are not so many nor so strong as among newly neighbored people where each seems to glory in outdoing the neighbor at his expense, and strife, jealousy and selfishness are exhibited constantly where only unity and care for each other's welfare should exist. The good Book recognizes and advises the principle of co-operation in the text, "Where two or three are gathered together in My name there will I be in the midst of them." And it is our daily experience that half a dozen of us can accomplish much more working harmoniously together than as if our efforts are put forth separately. Our principle of government is founded upon the system of co-operation, and has proved itself a marked success.

FRENCH PROGRESS.—Following is an extract from the San Jose Herald of late date: "Although agricultural interests in this country have accomplished something in the way of organization for actual benefit, it cannot fail to be of interest to them to observe the success which efforts in the same direction have attained abroad. The idea of organization is very highly developed in France, as shown in a recent report from Consul Covert at Lyons. Nearly everybody in France, from the actual tiller of the soil to the agent who sells the product of the farm, is a member of some of these agricultural organizations. As the subsidiary societies are controlled through one central body, it is possible to crystallize all recommendations into such a concrete form that very effective pressure can be brought to bear to secure any desired legislation. It is interesting to note that the French societies have thus far succeeded in keeping themselves entirely out of the politician's clutches, and have been able to devote themselves consistently and solely to the betterment of agricultural interests. In the objects sought, the methods pursued and the results achieved the French organizations are worthy of the most careful study of broad-minded agriculturists in the United States."

In our own country the class of people who need organizing the most are doing the least of it. The farmer as a consumer is the legitimate mark for the manufacturer; as a producer he is the prey of the manipulator of markets, the agent and the middleman; in politics, holding the balance of power in his vote as he does, his innocence is beguiled by the wits of the wily politician, and his vote is given to those who never had and never will have his interests at heart; from all of them he needs the advice, friendship and protection of his fellows, which can best be afforded him by means of an organized association. His pursuits are rather of a narrowing nature, tending to make his vision limited to the confines of the line fence, and his experiences with his neighbors and others with whom he has had to deal are apt to be such as to make him suspicious of all.

NEEDS BROADENING.—The farmer needs broadening; he needs to be waked up; he needs to associate in business with his fellows on the basis of equality; he needs to shake off his selfishness and suspicion and to acquire confidence in the honesty and fair dealing of his fellow men; and in turn he needs to be so placed that he must treat his fellow men fairly. The Grange is doing its part, wherever it is established, to accomplish the broadening of the character of its members, but it does not reach the majority of farmers. The Rochdale system of co-operative stores could be made in many communities the means of drawing the farmers together in unity of interest, besides being a means of saving much to them, giving better prices for their produce and inducing them to do business in a much more business-like manner than the average farmer now employs. The Farmers' Club is a source of considerable benefit to the class, and it would be well if the membership and attendance could both be increased and more of the tillers of the soil would get together occasionally for the discussion of public questions. Systems of farming may be improved upon through open discussion, and the political trickster would find a harder proposition in the farmer, whom he now considers "dead easy game" for him.

IT HAS DONE GOOD.—Locally, in our orchardists-farmers, we have the most broad-minded, liberal and yet conservative set of men to be found. Many of them are professional men and many are in active business life. Most of them have been engaged in other lines of business, either here or elsewhere. The co-operative fruit driers and exchanges scattered through our valley, in some one of which nearly every grower has an interest, are fruitful sources of good to them, and tend to keep them in touch with the market and the business world generally. Yet

I believe that the activity consequent upon the organization and operation of the California Cured Fruit Association has done more good for the farmers here than anything that has ever happened to them. They are interested in it. It has waked them up. I thoroughly believe that, if they never receive more than a cent a pound for last year's crop and get no other apparent benefit from it, they will make up the difference in a few years of increased activity.

However, simply because the fullest success may not have crowned their efforts in the first year of the organization, it seems incredible, impossible to me that the growers should contemplate abandoning the association as a failure. It would have been almost a miracle if it had made any great success the first year considering the elements and forces lined up against it, and I am not at all prepared to say that the mistakes, if any have been made, are not those of the body of the growers themselves, rather than of the officers; but, whichever they were, let us renew the officers if necessary, and at all events renew our courage and our better judgment and continue the organization to its highest success.

We can see the benefits of organization in the case of the Raisin Growers' Association. Even though they have not yet accomplished all that they hoped to, they have succeeded in relieving the unbearable condition which they were under when they were incorporated. While I cannot fully agree with their policy and their pyrotechnic management, they have accomplished by organization that which never had been and would never have been done single-handed. The Orange Growers' Association has not succeeded this year in doing all that was hoped for by its president, but the same difficulties in transportation it is meeting with would have had to be met by the growers if there had been no association, and they have succeeded in breaking away from the system of marketing which has sapped the vitality of the industry for years. It is organization which has accomplished this desired result.

PRUNE ASSOCIATION ESSENTIAL.—I still maintain, as I have for years, that a prune association is absolutely essential to protect the growers in a fair price for their product. If it takes the profit on a few crops to establish it on right lines it will be money well spent, and all the agitation in regard to it now is serving to advertise the association to the public, so that when we get started right we shall command the business respect of all concerned and shall reap success because we are a success. But I do not say nor believe that it need take the profits of even one year to establish the association on the road to success.

Even in the face of the past year's apparent failure to accomplish all that was intended, can we ever be content to go back again to the old system, where each grower's crop was brought into active competition with all the rest —where we permitted the men whose interests were frequently hostile to our own to name the price that we would take for our products? Our organization has enabled us in part to break away from the suicidal methods of business adopted in the past. The coming year should see the separation completed and the sale of our product established upon right lines.

I am a firm believer in the policy that the association should pack, advertise and market its own product through its own houses, brokers and agents. If necessary to use the established packing houses, they can easily be rented and operated by the association; and the same men who are now hired by others to operate them will be glad to work for the association instead of their present employers for the same consideration. The product should be packed in consumers' packages, in two or three grades, to be sold at a uniform price. I know that I will be met by the plea that this method has been tried and is not liked by the trade. Well, who expected it would be liked by the trade? Has the producer got to consult the trade every time he wants to adopt an improved method of business? Of course, it is not liked by the trade. No method will be approved by them which will take away from them the 100% to 300% profit they have heretofore been making on our product. The very purpose of the association is to subserve the interests of the growers, and not the trade. Let us hire them hereafter, instead of permitting them to dictate our policy. I believe that we have already wasted a year truckling to the trade.

CHANGE THE METHOD. — One says: "We cannot get along without those already in the established lines of business, and we must not antagonize them." That is debatable. There is no need of antagonizing any one that can be of any possible use to us, but the fruit growers of California are big enough to get along without any one special set of men. There are others. It need not be necessary to get along without the trade. Simply change our method of packing our fruit in bulk to smaller packages in which they shall reach the consumer, and decree that it shall go onto the market in that form. It is our fruit and they are supposed to be our agents.

We cannot, single handed, nor as individuals, throw off the shackles of bad business methods, as long as all the rest cling to them. It is only by united effort that we can succeed; and it would be much easier of accomplishment if all the growers were with us; but if that cannot be, then let all of us who are in sympathy establish our business on these or similar lines, and make it such a success that the outsiders will all want to come in.

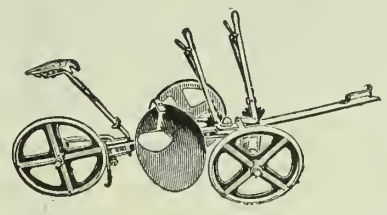
There is considerable objection to the association holding up a price "like an umbrella over the heads of the outsiders," and also to spending any large amount of money in advertising, lest it will have the effect only of selling the outsider's fruit. The proprietors of a certain soap would look a little silly if they should refuse to advertise their product for fear that they might encourage more cleanliness in the public and the consequent use of more soap, and that some other soap man might profit thereby. The output of the Cured Fruit Association should be sold upon its merits at a price to be stated upon the package, and the public should be educated through the many means of advertising, as to the superior quality of the association pack, until they create a consuming demand for it. In other words, the output should be treated as any other proprietary article and compete, if necessary, with every other pack of prunes. The trademark and package are susceptible of protection from imitation and can be made to sell every pound that we can pack. But in case there should be a larger quantity at first than we could profitably pack in this special manner, the open market is still left open to us for the surplus.

THE MATTER OF PRICE.—The matter of price, which has been worrying us all the year, is really a matter of secondary consideration. By a system of discounts we can make the retailer our friend, as we will have made the consumer our friend through our package and reduced price to him; and the elastic discount can be made to meet the competition of others, if necessary, in a way that will make them want to be our friends also. By making the business a success it will only be a year or two when competition will cease and all producers of good fruit will be with us, all the packers, agents, brokers, wholesalers and retailers will commend our methods and will be ready to push the sale of our products.

Organization is an absolute necessity to success, but organization alone cannot accomplish it. The organization is no stronger than the individuals that make it up. The purpose of organization is by unity and association together to make the individuals stronger. The California Cured Fruit Association cannot succeed without the united support of its members, without an established and aggressive policy, and officers with the strength of character and backbone to carry that policy through to success. With these requisites it can accomplish anything it sets out to do and no force can successfully hinder it.

I fondly hope to see the time in the not too far distant future, when all the fruit interests in the State will be amalgamated into one great organization of fruit growers, owning and operating packing and shipping houses, driers and canneries and managing their own business on business principles. I believe such an organization to be inevitable.

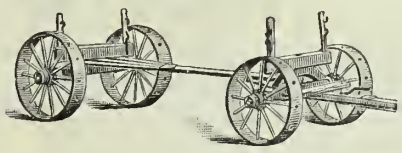
Rotary Disc Plows.



All the plow manufacturers have been making experiments of this style of plow, and this is evidence that they see sufficient merit in the principle of the disc plow to try to determine if they can make the plow so that it will do good work under all conditions. The Benicia Agricultural Works of Benicia, Cal., evidently have struck upon the right model, for they have placed orders to put up over 1000 of these plows for next season. From all accounts, it will be a surprise to other disc plow manufacturers, and many applications for agencies are already being made to the selling agents, Baker & Hamilton, San Francisco, Sacramento, Los Angeles. *

Farm Wagon only $21.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30-inch wheels with 4-inch tire, and sold for only $21.95.



This wagon is made of the best material throughout, and really costs but a trifle more than a set of new wheels, and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.

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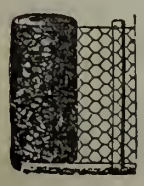
An Illinois farmer said that after harvest he had fully 200 bushels of loose oats on the ground that he could not secure any benefit from, because the fence around the field would not turn hogs. Figure the loss for yourself. He also said, all this would have been saved if he had used the Kitselman Woven Wire **Coiled Spring Fence**, and the value would have gone a long ways towards paying cost of the fence. With the **Duplex Machine** any farmer can make it himself at the actual cost of the wire. Catalogue free for the asking.
KITSELMAN BROS.
Box D41. Muncie, Ind.



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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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Patrons of Husbandry.

Grange Memorial Day and Children's Day.

TO THE EDITOR:—Attention of Patrons is called to the coming Grange Memorial Day, concerning which the following has been written by Bro. Aaron Jones, W. M. of National Grange:

"The thirty-fourth annual session of the National Grange established Grange Memorial Day on the third Sunday of June in each year. These memorial exercises may be held in private or public session. I fraternally recommend open session and a cordial invitation to all good people to attend. I would also recommend that at a previous meeting a suitable memorial committee be appointed to arrange the order of exercises, select appropriate music and scripture lesson to be read, and to appoint at least two members on each departed member to pronounce short eulogies on their lives. All other members who desire to speak will have opportunity to do so. It is earnestly urged and hoped that every subordinate Grange in the United States will faithfully observe from year to year this beautiful and impressive service. May it tend to cement more closely the fraternal ties that bind the living, by the common sorrow, and attest the fraternal regard of our members! The review of noble qualities of head and heart and true and worthy lives of departed members will tend to make us faithful to each obligation and mindful of all the duties we owe to each other, our neighbors, our country and mankind."

The attention of Masters and Lecturers of subordinate Granges is directed to Circular B, dated May 25, 1901, copies of which will be sent to the Secretaries. G. W. WORTHEN,
Master Cal. State Grange.

The following is the circular to which Bro. Worthen alludes:

The Summer is upon us. The schools are closing, and the season is approaching when the children in the cities look forward to the country with longing and hopeful anticipations. Dear Sisters, open your hearts and homes with all the pleasures which that includes to a child.

The Master of the State Grange of California has set apart June 7th, if suitable, as Children's Day. It only requires this announcement and a hint from your Committee, to call out the hearty co-operation of every Grange in the State to make Children's Day one of the most delightful meetings of the year. Arrange for your meeting, and if you have not enough children belonging to your members, make it an open meeting, and call to your assistance the children of your neighbors, and with their singing, recitations and readings, you will be furnished with a program of interest and merit, and not alone have a day of pleasure for yourselves, but also one of real enjoyment for the children, and a day to which you will all look forward with pleasure.—Mrs. N. A. Sanders, Chairman W. W. C., Cupertino, Cal.

THE Duplex Ball-Bearing Woven Wire Fence Machine manufactured by Kitselman Bros. of Muncie, Ind., is capable of weaving over 100 styles and kinds of farm lawn, poultry and ornamental fencing. The machine handles any and all sizes of wire, using large wires for laterals and weaving on any number of small sizes of wire. It also weaves a fence with desirable barb wire at top and bottom, which is much appreciated in certain localities. Full description and information regarding this machine can be obtained by addressing the manufacturers.

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A practical, reliable manual upon producing eggs and poultry for market as a profitable business enterprise, either by itself or connected with other branches of agriculture. It tells all about how to feed and manage, how to breed and select, incubators and brooders, its labor-saving devices, etc. 12mo., 331 pp., 140 original illustrations, cloth. Price, $1 postpaid.
PACIFIC RURAL PRESS.

THE VETERINARIAN.

Answers by Dr. Creely.

NOT THE STIFLE.

TO THE EDITOR:—I have a bull that put his stifle out of joint about a month ago, and desire advice as to how to reduce the dislocation. The bull is about four years old, weight 1400 pounds; he has not fallen off in flesh very much. The leg is shorter than its mate; the joints are slightly blackened. He does not bend the leg when walking, but pushes it forward. He eats well, but lies down most of the time. He bears some weight on the leg when walking. I would like your advice in the matter.—ROBT. N. ATMORE.

The bull is not stifled. A dislocated patella would permit him to stand firm at repose, but the leg would drag along as if it were not a part of him. Look elsewhere for the trouble.

FOR AN UDDER SORE.

TO THE EDITOR: — Will Dr. Creely please advise treatment for the following case: I have a four-year-old cow which has developed a sore on the central crease of the udder about 4 inches in front of the teats. It is about 3 inches in diameter and seems to start from a spot about as large as a dollar which oozes a substance like blood and water and forms a nasty scab which spreads out to the larger size. She came in fresh about a month ago and gives five gallons of rich milk daily, which does not seem to be affected in the least by the sore. There are no symptoms of "caked" udder and the cow is in fine healthy condition otherwise. Have been washing with diluted carbolic acid and while it seems to help some does not cure. —H. J. SMITH, Corning.

Wash once daily with warm carbolic water and castile soap, after which apply over the raw surface the following solution: nitrate silver, 16 grains; distilled water, 2 ounces.

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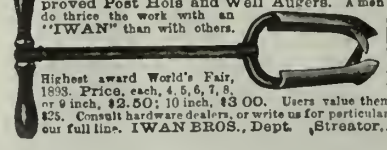
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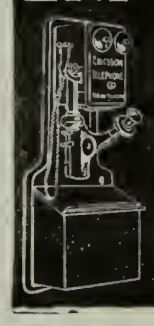
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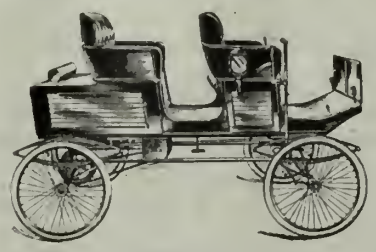
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They are sent free.

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THE POULTRY YARD.

Poultry Notes.

C. E. R. gives the Corning New Era the following advice: In supplying food for hens one should seek variety, and yet there should be a uniformity in variety. A good alfalfa patch will supply all the green feed they need. Prepare the soil with great care; plow deep, crush and roll until it is fine enough for vegetables, then sow thickly. Root up any weeds, irrigate when necessary, and you will have a stand that will be good for ten years. Drumhead cabbages make excellent food when hens are confined; hang the heads high enough so that the hens will have to jump to reach it. This gives them the desired exercise. Feed wheat at night; it need not be No. 1 milling wheat, but should be clean wheat. Do not buy so-called chicken feed because it is cheap. It is more expensive than merchantable wheat, for you are paying for dirt and sweepings of all sorts. A hen will eat a bushel of wheat in a season, or its equivalent. Corn is too fattening, especially for Plymouth Rocks. A good morning feed is a warm ration of bran and shorts and ground oats. Feed the table scraps at noon.

For new chicks a bread made of corn and bran and ground oats is excellent. At night, ground wheat sifted; use the flour in the bread and the coarse portion for the night food. Keep ground charcoal and fine gravel and sand with plenty of water before them. Take a common fruit can, cut a wee triangle on the edge of the open end, make a small nail hole in the top and you have a portable fountain. Wash the dishes for food and water every day. Keep the brooders very clean, give plenty of pure air—little chicks are like babies, they want constant nursing.

Waking Up on Egg Production.

Several California regions are waking up to the opportunity to increase the local egg supply. Until recently, says the Star, few hens were kept in the vicinity of St. Helena and hence there were few eggs, hardly enough to supply the home market. It was no uncommon thing to ask for eggs in the stores and be told there were none on hand and only an occasional box was shipped to San Francisco. Now it is entirely different. Eggs are being shipped by the stores and by private parties. Greater care is being paid to the kind of chickens raised, and this is important. It is just as essential to have the right kind of hens as it is to have fine cows for dairy purposes. Good chickens not only bring more when sold, but choice eggs are always in demand. During March there were shipped from St. Helena to San Francisco 8790 dozen eggs. The average price received was 11 cents per dozen, thus bringing the shippers $966.90. The principal shippers were Bell Bros. While the amount is small compared with that received at Petaluma and other egg centers, yet it shows a decided increase over former years. That there is no danger in overdoing the business can be seen from the following item clipped from the New York Tribune of recent date:

"On Friday morning a train composed of twelve refrigerator cars rolled out of Newton, Kan., for California, and each car was laden with eggs gathered in the vicinity of that town by one firm," says the Kansas City Journal. "The twelve cars contained 144,000 dozen, or nearly 2,000,000 eggs. The train goes as a special, and it is the first instance of a train carrying nothing but eggs which has been reported by any road running into California."

Another interesting item in connection with the shipment of eggs to California is taken from the El Dorado (Kansas) Republican. It says:

"Armour & Co. are sending a car of eggs to California, and in talking of their big business out here, Harry Miller gave us a fact which was surprising. In shipping a car of chickens to California at this time of year the eggs laid during the eight days of transit about pay the freight. The car will hold 3000 chickens and each day the eggs are gathered, and at the end of the journey 100 cases will have been filled, which when sold in California at 15 cents a dozen will realize $450, which about pays for the charges on the car. Cases are taken along and all calculations made to care for the daily supply of eggs."

Fine Fowls for the Philippines.

We have often indulged in anticipations that California would have a growing opportunity for sales of fine stock of all kinds in the awakening countries around the Pacific. Constant indications appear that these anticipations are being realized and that such desirable trade is beginning. We have in mind at this moment the demand for pure bred fowls. Mr. George H. Croley of this city has made a number of shipments during the last few months to the east coast of Asia from Corea southward and has had much valuable experience in selecting and fitting out fowls for such long journeys. Last week Mr. Croley made a shipment of Barred Plymouth Rocks to an army officer at Manila who has been assigned to forestry work and desires also to undertake some private experiment station work in connection therewith. Mr. Croley sent him two trios of Rocks, carefully selected, which will produce youngsters that will be a credit to American thoroughbred stock, and so nicely housed and provisioned for the trip that the risk of shipment is reduced to a minimum. We expect this pioneer shipment may lead to considerable trade when it is seen in Manila what fine stocks can be had from California.

Tbere is more Catarrh in this section of the country than all otber diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. Tbey offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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BY GUSTAV EISEN.

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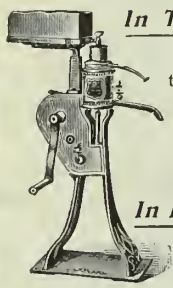

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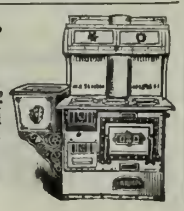

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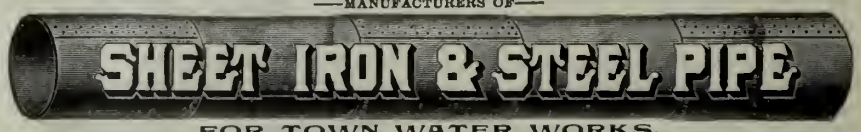

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THE PACIFIC RURAL PRESS
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Experiments with Wheat Growing on Alkali Soils.

As our readers have heard from time to time, the sub-station of the University of California at Tulare has been largely occupied with field tests of alkali soil to discover what could be grown upon such soils by various methods of cultivation, the use of chemical antidotes for the subjugation of black alkali and recourse to drainage to carry away the excess of soluble salts which render some parts of the land sterile. These tests, accompanied by patient and prolonged laboratory investigation and deep thinking, have yielded results which are in request all over the world, as we recently noted by reference to Prof. Hilgard's fame in foreign parts. The University reports are strongly alkaline as a consequence, and students are referred to them for the details of the whole proposition. It seems interesting, however, as this is a pressing topic in the agriculture of the arid region, to note thus prominently a few of the results secured by the University investigators, and illustrated by their photographs, and notes from the last published report.

It is shown that since the sub-station at Tulare was established, about three and one-quarter tons of gypsum, costing $5 or $6 per ton, have been applied per acre. The gypsum was not applied evenly to the soil. Had it been so applied, the cost of gypsum per acre would have been nearer $75 than $18. It has been carefully used on all the "spots" or centers of carbonate of soda (black alkali).

During the summer the foreman first marked off on the surface of the soil the spots showing strong alkali; then he spread gypsum on the surface and plowed it in as deeply as possible, following the plow with a second dressing in the furrows. The plots were then checked in the usual manner with the plow and flooded from two to four inches deep. When dry enough to permit plowing, it was treated a second time with gypsum, applied in exactly the same way as before.

The various plots into which the station tract is divided for the purpose of reclamation differ very greatly in the character of the soil. The sandy portions need only the gypsum treatment, as outlined above; the heavier soil, which includes most of the stronger alkali land of the tract, and all the so-called alkali hardpan, is greatly benefited by receiving liberal dressings of straw, which acts mechanically when plowed in and keeps the soil from becoming too hard. On all such plots the foreman, after the second treatment with gypsum, spreads short straw from the field—the shorter the better, applying as much as he can plow under. This straw decays very rapidly with the first rains, and it need not be plowed under until then. It greatly helps the sprouting of seeds when this process of decay is sufficiently advanced. Long experience has shown that it is very difficult to get wheat to start on these plots of heavy alkali soil even after the greater part of the carbonate has been transformed, unless straw is used for a year or two, after which there is much less trouble. It seems evident that the carbonates which have not been reached, owing to the difficulty of mixing the gypsum evenly through the soil, are usually present at some points in sufficient quantities to endanger the life of most seeds, at least in heavier soils, which are colder; seed therein germinating about two weeks later than seeds sown at the same time in sandy plots. The use of straw in the winter on these heavier soils tends to keep the surface warm and loose and to hasten germination. Late spring sowing of seeds of any kinds on such heavy soils, even when nearly or quite reclaimed, is unsatisfactory, even when the land can be irrigated. When irrigated, the surface soon becomes very hard, preventing germination. The best crops, therefore, for such lands, when reclaimed, seem to be those that will stand heavy frosts and can be well established early in the season, such as the hardy perennials.

Wheat Grown on Alkali Plots, Showing Degrees of Reclamation.

Wheat in Alkali Land After Reclamation.

Alkali soil should never be plowed when wet, nor should it be finely pulverized before the rainy season, because it would form a hard and smooth crust. In sowing wheat, barley, rye or other cereals, it is better to drill the seed in than to broadcast. The drill leaves small ridges and furrows, which better carry off the water, preventing the remaining carbonates from settling in one spot, and somewhat protecting the young grain from wind and sun.

White Alkali Crust, Showing Failure of Small Cultures.

Adjoining Plot of White Alkali with Good Wheat.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 8, 1901.

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The Week.

It has been a week of an acceptable California summer type, with heat enough to promote haying and fruit ripening, and yet free from scorching winds which too precipitously hasten harvesting. The moderate weather is giving the growing plant every possible chance to make the most of itself, and the season seems to be doing all in its power to atone for the freakiness which it manifested a while back. There is much late pasturage, and the dry feed supply will be great. There is not nearly enough stock in sight to use up the forage. This year is a striking instance of the efficacy of late rains and how bad a season may be and still reform and be good in its later fractions.

Speaking of what rains may do, even in California, suggests the report this week from Chicago that rains in the Northwest have interfered with a strong bull movement in wheat. It is said that "attempts to corner July wheat were frustrated by an avalanche of the product from the Northwest. July wheat opened all the way from 78 cents to 79¾ cents, but before long there was a sharp break and it dropped to 75⅝ cents. The break was caused by the wheat from Minneapolis and Duluth. The heavy rains in that territory June 3 caused an oversupply of the grain and resulted in the failure of the planned corner." At first sight this statement would lead one to think that rain must be a pretty active agency if it would rush in so much grain the same day that the storm fell. But there is so much that is figurative about the transactions and those who write about them that one has to be careful not to take the things literally. The rain probably loosened the hands of holders, which were closed tightly because of the drouth, and all the other things followed in the mind's eye, which is where most of the wheat in these transactions usually is.

Wheat here has been somewhat unsettled by the upset in Chicago. Spot wheat is practically unchanged though it has wavered a little, but futures have followed the Eastern fluctuations and even surpassed them. Ocean freights are higher again and this hurts somewhat. Barley is slow; buyers are reducing their views a little, but the quotation runs pretty evenly and not much interest is manifested. Oats are nearly out; a few are held high as for some time back. Corn is easier; more domestic and more Eastern are offering. Beans are unchanged; there is little stock and light trade. The Government is playing here and at the East to see which is the better place to buy. Bran is still held high. Hay is steady for the best and the promise is still good for this grade. Offerings of damaged early-cut hay are large and buyers are slow. Beef and hogs are a little easier though Eastern hogs are not threatening, for Eastern markets are up to ours. Mutton is steady. Butter is firm for the best and the worst, but medium grades are in large volume and less demand. Cheese is weak particularly for flats, which are in large supply and buyers negligent; Eastern cheese is firm. The best eggs are looking up; of common there are too many both local and Eastern. The poultry market is soft for all except large young chicks; six or seven cars of Eastern come weekly. Old and new potatoes are strong because of light arrivals. New onions are doing a little better than last week; some new yellow onions are now arriving. Choice oranges and lemons are firm, medium kinds plentiful. Canners are taking choice cherries freely, both white and black, and Cincinnati picklers are again taking Royal Anns in quantity. Prices are high. Apricots are still the early kinds and many of them scrubby. A sale of July dried apricots is reported at 9c, but this does not suit growers' views at all, which buyers say are out of sight. Figs and watermelons are now in. Strawberries hold up well. Dried fruits are at a standstill. Wool is dragging again. Eastern buyers are bidding low on what is now available here. The hop outlook is unchanged. Little honey is coming here; it is said to be going East from the south in some amount.

Governor Gage has filled the vacancies in the State Board of Horticulture and the Board will soon be in shape for active work during the next two years. The Governor has done very wisely in appointing Mr. Ellwood Cooper of Santa Barbara and Mr. R. D. Stephens of Sacramento. Mr. Cooper has held the presidency of the Board ever since its organization and has given his best efforts unstintingly to its interests and affairs. He has shown himself well fitted by talent, experience and dignified bearing to warrant the leadership of the fruit interests of California which is so freely accorded him. Mr. R. D. Stephens has served a shorter term, but before his call to the Board he had a wide reputation for success in his own fruit enterprises and untiring zeal in promoting undertakings which he believed to be for the advantage of the industry. His service on the Board has been particularly valuable and his relation to the effective work of the recent fruit growers' conventions is well known to our readers. We are sad to lose officially Mr. A. Block of Santa Clara, who so long and faithfully attended to the business of the Board and whose wise counsels have been so highly esteemed. The new members, Mr. A. C. Eisen of Fresno and Mr. A. V. Cash of Santa Clara county are prominent in fruit circles and are valuable acquisitions because of their individual worth and their lines of experience which will somewhat broaden the range of the Board. It is expected that a meeting will be held during the next few weeks to lay out the work for the next two years.

The new association of fresh fruit shippers is pushing its propaganda among the growers. On Monday a meeting was held at Yuba City of fruit growers from Sutter, Yuba and Butte counties. E. I. Galvin, president, and A. R. Sprague, manager of the California Fresh Fruit Exchange, addressed the meeting. The growers heartily endorsed the methods of the exchange and another meeting was called to take definite action. It is believed that considerable fresh fruit will be shipped through the exchange from the Yuba City region this season.

As we go to press on Wednesday the election which will shape the future of the Prune Association is in progress. Mail votes in advance have been arriving in considerable numbers. It is reported from San Jose that there has been deep apprehension among the friends of the association that there would not be a quorum present at the meeting and nothing could be done but mail ballots relieved this anxiety largely. Should a majority of the members not be represented by ballot or in person, the meeting and all its proceedings would be invalidated and there would be nothing for the managers to do but close up the affairs of the association and disband.

Those who have participated in the free discussion at our institutes and farmers' club meetings during the past year concerning the horticultural standing of various birds will be glad to learn that an expert inquiry is to be made at once into the behavior of California birds. Dr. C. Hart Merriam, Chief of the Biological Survey of the Department of Agriculture at Washington, has sent to this coast Prof. F. E. L. Beal, who has done such excellent work in determining the character of several Eastern birds, whose work was in question, and he will spend a good part of the summer in our orchards pursuing his investigations. Many reports have been made of late of damage done to fruit by birds on this coast and it will be of great advantage to have these matters scientifically settled. We had the pleasure of meeting Prof. Beal the other day and talking with him about his undertaking. He wishes the fullest opportunity for the broad pursuit of his work and would like to hear from all our fruit growers who think they have grievances against the feathered tribes and to have also the acquaintance and co-operation of all local ornithologists. All such matters may be transmitted in our care and we will see that they intercept during the flights he will make to various parts of the State.

Eastern meat prices are booming. It is reported from Chicago that dressed beef rose 3 cents per pound on Monday. The packers say the demand is exceeding the supply and further sensational rises may ensue. The scarcity of beeves, heavy exports and the fact that the farmers have sold their corn and are bringing in fine cattle were given as reasons for the present rise in the price. Regarding the cattle market, Price of the Armour beef department said: "Cattle are very high in the yards. The demand is good—stronger than the supply. These are natural causes to make the price go up. Exports are very heavy, and with the general demand for beef cattle all over the country the price must go up naturally." In New York the butchers have announced an increase in the price of meats. The wholesalers have increased the price of carcasses to 8¾ and 9 cents a pound—an increase of about 1 cent over ruling prices.

Everything still looks like large prices for wine grapes. It seems reasonable that conditions generally may resemble those in the Santa Clara valley, whence something of a careful inquiry has been made and published. The statement is that conservative estimates made by local wineries give the yield of wine for the valley this season at 1,500,000 gallons. The yield last year was given at about 3,000,000 gallons. Last season the price of grapes varied from $17 to $19, and in few cases were tests for sugar made, so anxious were the wineries to get stock. The test this year is going to be of still less importance, owing to the abnormal shortage. Wineries bought grapes last year with 19% of sugar, as against the required 22%, at market prices. They are going to pay $25 a ton this year, it is said, and ask no questions. The past year the growers fared almost as well as when they had four times the yield. Instances are on record where vineyard men realized within 10% of the gross receipts of the amount yielded when grapes went almost begging, owing to their abundance. This season the conditions are not so promising. The high prices will not balance the shortage in yield. There is evidently to be a very short crop in many districts.

The Dairymen's Association of southern California will hold its annual meeting at the Chamber of Commerce, Los Angeles, July 13, 1901, for the election of officers and to transact any other business that may be brought before it at that time. President Sessions publishes the statement that there is a great deal of important work that the association should do and all dairymen and farmers should attend and assist in the work. The officers are working on a programme and hope to make this a very interesting and important meeting.

QUERIES AND REPLIES.

Summer Treatment for Peach Moth.

To THE EDITOR:—I was unable to spray for the peach moth last winter, so I sprayed my Hale's trees about May 15th with some carbolic wash which had been standing a year or more, and the leaves have fallen and the fruit may fall also. I shall prune back the trees. Is there anything better to do? Seeing the injury to the Hale's I did not spray the Salways. What can I use now to save them from the moth? They seem to have more worms than other peaches. What is the peach moth like? I find a sort of blue transparent-winged insect, also some millers about the trees.—GROWER, Placer county.

Evidently the injury to the Hale's trees was done by using a wash of excessive strength. The pruning-back, of which you speak, is the best thing to be done under the circumstances. It is very difficult to treat the peach moth satisfactorily at this time of the year. All that we know of summer treatment consists in using one pound of Paris green, one pound of slaked lime stirred together with a little water into a sort of paint and then thoroughly mixed with 400 gallons of water and kept agitated while applying to the trees. This is about twice the strength which is advised for use on apple and pear trees in connection for the codlin moth. This difference is essential because the leaves of the peach are very susceptible to injury by Paris green. In spraying the Salways with this mixture care should be taken to reach the point where the stem is attached to the fruit, because it is there that the worm usually makes its entrance. The most satisfactory treatment for the peach moth is the use of strong kerosene emulsion, or the lime, salt and sulphur wash during the winter time, for then worms are hibernating in the rough bark, usually in the crotches of the trunk and of the main branches, and there easily killed by this treatment. At the present time they are moving upon the bark or in the small twigs and are ready to attack the fruit whenever it pleases them during the summer. The peach moth, the parent of the worm which you find in the fruit, is a very small insect somewhat larger than a clothes moth, but neither the "transparent-winged insect" nor the one which you call a "miller" is the culprit in this case. The true peach moth is so obscure as seldom to be noticed.

Another Case of Dying Grain.

To THE EDITOR:—I send few stalks of dead wheat. About 10% of my wheat is dying before it matures; some dies before it heads out; in places the wheat all dies for a space of a square rod or more. There are also dead bunches or stools of wheat all over the field. I can see no cause for it dying. Please ascertain the cause and suggest any remedy.—CEREAL, Sutter County.

The stalks of dead wheat show nothing which would explain the cause of their failure. They have simply prematurely ripened caused by some injury to the roots. This might be caused from lack of moisture in the soil, or by injury to the roots through some ground insect, and the latter seems more reasonable because the trouble is so scattered. There is occasionally reported from your part of the State the larva of the crane-fly, a very dark colored, almost black, cylindrical worm, about an inch or a little more in length and the thickness of a wheat straw, which feeds upon the roots of grain and destroys it by cutting off its connection with the soil. This usually occurs during wet winters, as the worms are forced to work very near the surface when the soil becomes full of water. We should hardly expect to find them under the conditions which have prevailed the last year. However, it seems clear that the cause of the trouble lies in the soil, as stated, and the plant itself which you sent does not give any indications of the cause. It would be interesting to do a little digging in the soil where you find plants dying and send us any form of life which you may discover.

Hollyhock Disease.

To THE EDITOR:—Inclosed find a leaf from a hollyhock that has some kind of fungus or rust which has been on the plant all the spring. All the remedies that I have tried have been failures. Please state what it is and remedy.—H. D. STROTHER, Grimes.

The leaf has a fungus which causes what is commonly called "hollyhock disease," because it is so abundant on that plant. It also widely affects the common malva, and the scientific name of the fungus is Puccinia malvacearum. It belongs to the same class as the rust of grain. The treatment for it is spraying the leaves early in the season with the Bordeaux mixture. It has also been observed that if all the dying leaves affected with the disease are removed and burned, and none of them allowed to lie and decay upon the ground, there is much less of the trouble the second year, showing that the spores of this fungus pass through the winter in the ground and are then ready to attack the stem and leaves of the new growth as it appears the following spring. The appearance of the disease is well shown by your specimens, the fungus causing small, roundish swellings or pustules, thickly crowded on the leaf, and they break as they mature, expelling quantities of reddish dust, which, being carried to new leaves, spreads the infection. The application of the Bordeaux mixture kills these spores and therefore prevents the spread of the trouble to the newer leaves.

Leaf Fungus of the Apple.

To THE EDITOR:—I send leaves from young apple trees which are diseased. I find a few small insects of the grasshopper pattern, but none longer than a grain of wheat, and it does not seem as though they could do the injury. The Spitzenberg is most injured. The King is not affected. The trees not affected are making a fine growth, while the others seem to be at a standstill. I have thirty acres, planted last January. Please tell me what to do.—GROWER, Sonoma county.

The apple leaves which you send are badly infested with a fungus which appears to be Entomosporium maculatum, causing reddish brown spots upon the leaf and sometimes causing irregular injuries by the running together of these spots, so that a good part of the leaf is involved. The specimens do not show any form for complete identification, because of the absence of the spores which will be formed later. Still, the appearance is sufficiently definite, we think, to indicate this disease. The treatment for it is a thorough spraying with Bordeaux mixture. The disease is quite common in the East on young trees and in nursery rows, and is capable of doing much injury in checking the growth, unless it is arrested by the Bordeaux treatment. The insects you mention are leaf hoppers, which are also capable of doing some harm, but do not usually occur in sufficient numbers to accomplish it. We have no doubt that if you proceed at once with a thorough treatment of the Bordeaux mixture the trouble will be arrested and new growth will be made. We would like you to send a few more leaves before the Bordeaux mixture is applied, in order that we may make further search for the spores. The checking of the trouble depends directly upon quick and good work with the Bordeaux mixture.

More Vegetable Hair.

To THE EDITOR:—Referring to the article on "Vegetable Hair" in your issue of May 18th: A possible cue to its identity may be had in the fibrous envelope—the rough, hairlike coat of the soap root plant (Chlorogalum pomeridianum), common throughout California. This "hair" has been largely used as a substitute for real hair as a filling for mattresses. The writer remembers that during the early '70s there was a factory utilizing this substance near the old Mission Dolores, in San Francisco. Whether this is the vegetable hair meant in the inquiry is of course unknown to your correspondent. I merely suggest that it may be. I offer it for what it is worth.—L. A. WINCHELL, Primavera.

This is getting more and more interesting. The factory mentioned is remembered by us as working cocoanut husks.

Not Mildew.

To THE EDITOR:—I send some vine leaves. Will you please tell me if it is mildew that has started on them. I have never seen mildew start in that way, but as we are having damp weather here in Fresno for this time of the year, I have been watching my vines and find that a good many are affected the same way as leaves inclosed. I shall be very glad to know that it is mildew that I may apply sulphur.—CHRIS JORGENSON, Fresno.

It is not mildew. It is a peculiar whitish deposit which has been noticed from time to time for many years in your district and has been carefully studied but its exact nature has not been made out. It looks like an exudation which on evaporation of moisture takes a whitish powdery form especially around the outer edges and surfaces of the leaf. It does not look like mildew nor does it produce the effect of mildew on the leaf tissue. So far as we know it does no appreciable damage to the vine.

A Free-Martin.

To THE EDITOR:—Some years ago I bought a registered Holstein cow; in due time she gave birth to twins, one a male the other a female. The female is now eighteen months old. Although given every opportunity, she has never showed any signs of breeding. Her bag is no larger than a six months' old calf. Do you think she will ever have a calf? They all say she never will.—A. RODGERS, Fresno.

Your heifer is what is commonly known as a free-martin. Though isolated cases of a free-martin's breeding are on record, the chance is too small to count on, and in your case even that chance has been practically negatived. The animal is only of value for beef.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 3, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cool, cloudy weather prevailed during the first half of the week, but was followed by higher temperature and northerly winds. Conditions have been favorable for all crops and grain has matured rapidly. In some sections it is reported that grain has never been in better condition at this date than now. Haying is in progress, and is nearly completed in some places; the yield is said to be excellent, and the damage by rain during May is much less than anticipated. Green feed is becoming somewhat scarce in places, and cattle are being driven to the mountain ranges. Citrus fruits are in good condition. Deciduous fruits have ripened rapidly and in many sections will yield good crops. Pears were slightly damaged by north winds.

COAST AND BAY SECTIONS.

Conditions have been very favorable for all crops during the week. Warmer weather has caused a rapid growth of grain, and enabled farmers to continue hay making. Later reports show that hay was not so seriously damaged as estimated, and there will probably be an average crop in all sections. Wheat and barley are in excellent condition and large crops are expected. Cherries and other fruits have ripened rapidly. The yield of deciduous fruits will probably be less than average, though in some places good crops will be gathered. Sugar beets and hops are thrifty. The yield of apples in the northern part of the State will probably be below the average.

SAN JOAQUIN VALLEY.

The first part of the week was cloudy and cool with showers in all sections, while the latter portion was clear and warm. The weather has been very favorable for all growing crops and grain has filled nicely. The damage to hay by the rains was much less than was at first anticipated. Haying continues in many sections and the crop will be large and of good quality. The wheat and barley crops will be fully up to the average. Grain harvesting has commenced in a few localities, but will not be general for about a week. The warm days in the latter part of the week ripened the grain very rapidly. Deciduous fruits are making good growth. Vines are in splendid condition and making fine progress. Green feed is abundant, and stock of all kinds are in excellent condition. Water is plentiful.

SOUTHERN CALIFORNIA.

The weather has been generally cool and cloudy or foggy during most of the week. Cut hay has cured very slowly, and orange trees are showing the lack of sunshine. Other crops have been benefited by prevailing conditions. Sugar beets are thrifty, and will probably yield a large crop. Alfalfa has made rapid growth. Grain is in fair condition and a good crop will be harvested in some sections. The damage to hay by the recent rains was not as great as estimated. Deciduous fruits are looking well. Beans are up and growing nicely.

EUREKA SUMMARY.—Cool weather and deficiency of sunshine have retarded the growth of vegetation. Small fruit and berries will be plentiful but late. Green feed is abundant.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 5, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka	.00	47.40	50.03	43.77	60	44
Red Bluff	.00	24.63	22.94	26.17	94	58
Sacramento	.00	20.21	20.24	20.19	94	50
San Francisco	T	21.17	18.42	22.34	81	48
Fresno	.00	11.31	10.27	8.76	98	50
Independence	.00	5.87	3.65	4.59	86	48
San Luis Obispo	.00	31.13	17.20	16.79	76	44
Los Angeles	.00	16.28	7.91	17.18	72	52
San Diego	.00	11.41	5.89	9.38	64	58
Yuma	.00	3.60	1.29	2.89	100	60

HORTICULTURE.

Exclusion for Pests—Entry for Their Foes.

Report of ALEXANDER CRAW, Quarantine Officer of the State Board of Horticulture, for the months of December, 1900, to April, 1901.

During this time we have found trees, plants or fruit on ninety-five steamships and sailing vessels from foreign countries, and also from the Hawaiian and Philippine islands. The receipts consisted of 369 cases, boxes and bales of trees and plants; 97 loose lots of plants, numbering from one to a dozen in each lot; 10,386 boxes of citrus fruits, principally limes and Japanese oranges; 2848 boxes of miscellaneous fruits; 7373 boxes of tomatoes from Mexico and Honolulu; 5598 crates and sacks of onions from Australia. The above were carefully examined, and, when found infested with insects or diseases not already in the State, were destroyed, and, when necessary, all other stock has been fumigated with hydrocyanic acid gas. Four new steamship lines are now running between San Francisco and Central and South America, calling at the principal ports en route.

THE ORANGE MAGGOT.—On April 5th the steamship Arequipa arrived from Valparaiso via Mexican ports and had two baskets of oranges as ship's stores. These I found infested with the Mexican orange maggot (Trypets ludens) and burned them in the ship's furnace. The Pacific Steam Nav. Co.'s steamer Peru arrived on April 29th from Chili, via Acapulco, Mexico, and had a bin of oranges from the latter port for use on board ship. Upon inspection, I found that they were also infested with orange maggots. The tables were set for breakfast and the fruit on them was Mexican oranges. These I removed and burned with the others. From the size of the maggots in this and former lots destroyed, I am convinced that there are at least three broods of the pest during the time that the crop of oranges remains upon the trees.

During the summer of 1897 Alfred Koebele visited Mexico in search of beneficial insects for the Hawaiian Government. Before his departure I requested him to procure for me preserved specimens of orange maggots and flies. He visited the State of Morelos five different times, and it was only upon his last visit, about the middle of October, that he found any infested oranges. Since then I have been informed that the flies only deposit their eggs upon ripe fruit. We have found oranges containing maggots in the months of November, December, February and April. Each time we found them in various stages, indicating several broods. This would be a serious pest in California, for our Valencia Late oranges are sometimes allowed to remain upon the trees for early fall shipments. We are in receipt of a communication from the Hon. A. L. Herrera, Chief of the Commission De Parasitolgia Division of the Mexican Government, requesting literature and information upon this orange pest, as his Government intends commencing an energetic warfare against it. Maggots are now found in oranges as far north as the city of Chihuahua, in the border State of the same name.

JAPANESE TREES BURNED.—In former reports I have referred to the small, white, destructive scale Diaspis amygdali. On April 25th the steamer Nippon Maru arrived from Japan and had one bundle of 100 two-year-old flowering cherry trees for planting in Golden Gate Park, San Francisco. The trees were infested with the above scale and they were burned.

PEACH APHIS.—The scarcity of peach stock for the past three years in this State has caused planters and others to purchase such trees in the States immediately east of the Rocky mountains. The trees were supposed to be grown in those States, but subsequent reports show that they had been grown farther East. This stock all arrived by rail and has been dipped by the county officials. Thousands of peach trees have been burned by the commissioners when found infested with black aphis (Aphis persica niger), but, unfortunately, some lots have escaped, and this pest has obtained a foothold in several counties. Nearly all shipments arriving from the Eastern and Southern States are accompanied by certificates of inspection, signed by an official of the agricultural college or experiment station in the respective States, stating that the trees have been examined and found to be apparently free from injurious insects, etc. The inspectors have heretofore been instructed not to rely upon such certificates, because of the fact that nearly all inspection work in the Eastern and Southern States is done during the summer, when the condition of the roots cannot be ascertained. The above aphis also infests the roots of peach trees.

OTHER CITRUS PESTS.—The danger of introducing the white fly (Aleyrodes citri), that has caused so much damage to citrus fruits in Florida, really demands that some effective way of preventing its introduction into California be considered. Probably the most effective check for the present would be for the supervisors of the various citrus fruit growing counties to adopt Riverside county's plan of passing an ordinance prohibiting the bringing of citrus fruits from Florida. The danger of introducing this pest is greater than it is with the scale insects. In the early stages of their existence the aleyrodes resemble scales; but they differ in the fact that the females are winged as well as the males. In a letter from a correspondent in Chili he states that this pest has lately appeared in some of the orange trees of that country and is causing alarm. In writing about the purple scale (Mytilaspis citricola), he says: "This parasite has destroyed the greater part of the orange trees in the coast valleys of Chili," and adds: "The pecuniary loss to this country through the destruction of the orange trees is very great. To extirpate this pest every class of remedy has been tried, but with no effect so far."

FOR THE BLACK SCALE.—On Feb. 27th Prof. Chas. P. Lounsbury, Government Entomologist of the Cape of Good Hope, South Africa, sent me a box of twigs and branches of myoporum and oleander slightly infested with black scale (Lecanium oleæ), the box coming by way of England. From Cape Town it was sent in the cool chamber of the steamer to London, and from there to San Francisco by express. All charges were generously paid by the Cape Government. There was a most unfortunate delay when the box reached New York, as it was detained by the customs officials for invoice. On April 9th I received notice of the detention and immediately telegraphed the facts to Dr. L. O. Howard at Washington. He telegraphed the Government dispatch agent at New York, who had them promptly released and forwarded. Unfortunately, however, the box must have gone astray, for it did not reach me until the 23rd. In consequence all the myoporum was dried up and the scales dead. The oleander material was in a slightly better condition, and at this writing three of the chalcid parasites (Aphycus lounsburyi) have issued. This parasite appears to attack the half-grown black scale.

HELP FOR OTHERS.—On April 15th, at the request of Dr. Howard, a colony of Vedalia cardinalis was forwarded to Dr. Antonio Berlese, Scuola Superiore di Agricoltura, Portici, Italy, to check an outbreak of cottony cushion scale (Icerya purchasi) in that country.

In my report to you, dated Nov. 11, 1897, and published in Sixth Biennial Preliminary Report, I refer to the sending of two colonies of ladybugs (Vedalia cardinalis) from this office that checked the scale in Portugal. This was also done at the request of the Department of Agriculture, Washington, D. C. We now have great difficulty in securing cottony cushion scale to feed the four species of ladybugs that prey upon that scale. Numerous applications have been received and the insects supplied, but in nearly every case very few scales were found. A year ago several serious outbreaks of this scale occurred in different counties, but were soon checked by colonies of ladybugs sent from our breeding jars.

THE APRICOT SCALE DESTROYER.—I am pleased to report that the internal parasite, Comys fusca, has been successfully established in Tulare county upon the brown apricot scale (Lecanicum armeniacum). This scale has caused alarm, especially among the prune growers, owing to the great amount of honeydew thrown off by the scales, and the subsequent growth of black smut, injuring the growth of the trees and the quality of the fruit. Two years ago, and last year, also, colonies were sent to prune growers in the San Joaquin valley. Among others, George A. Fleming of Visalia received a colony. I am just now in receipt of a box of scale-infested twigs from his orchard. The comys are now issuing from the scales. A careful examination shows that fully 90% contain parasites. This is at least fifteen days earlier than they hatch in Santa Clara or Alameda counties. George H. Cutter, County Horticultural Commissioner of Sacramento, has the comys well established in his orchard, and is now placing them in other orchards in his county. The flies are now hatching from the scales he sent me. The scales that are parasitized produce no eggs and are slightly smaller and of a darker color than the healthy scales at this time of the year. The female deposits a single egg in each scale about the time that the scales are three-fourths grown. The egg hatches into a small, blind, footless grub, destroying the scale and changing into the chrysalis under the scale. The winged parasite then cuts a hole through the top of the scale and makes its escape.

If orchardists who have received colonies of Comys fusca within the past two years will make an examination of the scales with a good pocket lens, they will notice the exit holes in the scales if the parasites have established themselves.

RED SPIDER EATERS.—Per steamer Sierra, that arrived Feb. 10th, and the steamer Sonoma, March 18th, we received two fine consignments of "red spider ladybugs" (Scymnus vagans) from George Compere, which he had collected in Australia. Mr. Compere writes in the highest terms regarding this minute ladybug. Strong colonies have been sent to Alameda, Colusa, Fresno, Merced, Los Angeles, Santa Barbara, San Diego, Santa Clara, Contra Costa, Sacramento and Yolo counties.

ANOTHER FOE OF THE BLACK SCALE.—We have received no more internal parasites of the half-grown black scale (Myiocnema comperei, Ashmead), as Mr. Compere was unable to again visit Brisbane, Queensland. In a letter from Mr. Compere, dated Sydney, Feb. 26, 1901, he writes: "Since writing you last I made a trip to West Maitland, and on the way I remained over two days at Newcastle, there being plenty of oleander trees there and plenty of olive trees at Maitland. I expected to have no difficulty in finding black scale, but was mistaken, for at both places the same condition prevailed as at Merickville, with the same parasites present, and hand picking of the scales was the best that I could do."

In another letter, dated March 26, 1901, he writes: "The parasites on the eggs of the black scale are in many respects the same as our dilophogaster, but, I think, are going to be more effective. I found a plant from which I picked thirty-eight scales—every one that was on it—and each contained a maggot."

Those parasites reached us in good condition, and have been developed from that and subsequent sendings, so that we have been enabled to send colonies into districts where the conditions are suitable for their successful colonization. Specimens were sent to Dr. L. O. Howard and it was found to be a new species. On the suggestion of Dr. Howard, Mr. Ashmead named it Hemencyotus crawii, Ashm. Ten colonies were sent to Santa Clara county and liberated upon black scale; seven colonies to Los Angeles county; two colonies to Santa Barbara, two to Alameda, two to Ventura, one each to San Diego and Monterey counties. Mr. Compere has also forwarded two new species of internal parasites of aphis that arrived in good condition and were liberated in Alameda and Santa Clara counties, as these counties are convenient, and delay would have proved fatal to such small insects.

GRASSHOPPER PARASITES.—On Sunday, Feb. 10th, the steamer Sierra arrived from Australia and had in the cold-storage room a box of dead grasshoppers, containing chrysalis of the internal dipterous parasite, Homolomyia canicularis, collected in Australia by Mr. Compere. The box was again placed in cold storage in this city in a room where the temperature is kept at from 35° to 40°, and will remain there until June, when our grasshoppers will be plentiful. We will then place the dead hoppers in a slightly warmer temperature, so that the flies will develop, when we will liberate them in various districts of the State where grasshoppers are destructive. Two more boxes arrived Sunday, Feb. 24th, per steamer Alameda, and were placed on cold storage with the others.

It was impossible for me to again visit Livermore valley after liberating fifty-nine healthy parasites on June 14th, and referred to in your Seventh Biennial Report. The conditions were very favorable at that time, so I hope the parasites got a start.

Branch Office State Board of Horticulture.
Clay Street Dock.

Aphis Proof Roots in New South Wales.

TO THE EDITOR:—In several issues of your paper recently I have noticed inquiries about blight-resistant apple stocks. I was rather surprised to see that in Australia we were so much ahead of the States on this subject.

In these Colonies apple trees are unsalable unless they are worked on blight-proof stocks, in fact the more advanced growers on this side are turning their attention to blight-resistant varieties only, and there are now a large number of excellent varieties available, and I have no doubt that your growers will require to turn their attention in that direction also, in fact I believe there is already a move being made on that subject, as the firm of Hunter & Sons, nurserymen of Gospora, New South Wales, have within this last few days dispatched a consignment of apple trees of blight-resistant varieties to the order of the U. S. Department of Agriculture at Washington, D. C.

In the various replies which I have noticed in your paper I have only noticed one stock mentioned, the Northern Spy. I have not noticed any mention made of the Winter Majetin stock, which is a stock that many growers prefer, as it has many advantages over the Northern Spy.

It is a more vigorous rooter and does not form such mats of fiber close to the stem, consequently Majetin gets a far better grip of the ground, which is a great advantage in exposed situations. Majetin is also better suited to moist localities.

Northern Spy also forms numerous rough root nodules on its stem above the ground, which forms a harbor for vermin. Majetin, on the other hand, is clean stemmed, and consequently is easier kept clean.

I obtain my stocks for working from Hunter & Sons, the firm I mentioned previously, who generally have a good stock on hand. I will be most happy to supply any more information I can for the benefit of growers, either privately or through the columns of your paper. JOHN SWAN.

Somersby via Gosford, New South Wales.

Our nurserymen are getting upon this aphis-proof stock and we believe that two of them at least have such trees under propagation. No doubt their ad-

vertisements in the PACIFIC RURAL PRESS before the next planting season will offer this desirable stock. It seems strange that we have lagged so far behind in this matter. Both the Northern Spy and Winter Majetin were commended in these columns as resistant more than twenty years ago.

Cyclopedia of American Horticulture.

The third volume of Bailey's "Cyclopedia of American Horticulture" is now ready for delivery and the fourth is expected during the present summer. We must congratulate both the distinguished editor, Prof. L. H. Bailey of Cornell University, and the publishers, The McMillan Co. of New York, on the approaching completion of this monumental work, which will be a lasting credit to them and to the splendid art and industry which it represents. The work presents the latest information along the broad lines of its plan in form available for reference, and the presentation is made clearly and handsomely as well as expertly in the quality of its contents. The close of the third volume brings the aggregate of the work to 1486 large quarto pages, so that the last volume will be probably near the 2000-page mark. There will also be over 2000 original engravings, and the breadth of the expert knowledge conveyed is shown by the fact that the full work will contain about 5000 signed contributions, bearing names which commend themselves because widely recognized as eminent in the special subjects to which they are appended. The cyclopedia is plainly, from all points of view, a great work. The cost is $5 per volume, and the work can be ordered through the PACIFIC RURAL PRESS.

THE FIELD.

Mixed Farming in California.

By E. A. MAY, at the Farmers' Institute held at Poplar.

In this age of specialties it may appear like a backward move to advocate diversified, or mixed, farming; however, I will take my chances of being considered a "moss-back" and present my views of some of its advantages in this locality.

There are many things to be considered in deciding the most desirable industry for a given locality. The first of all, we believe, are its natural resources and adaptability. Then comes its available markets, with possible results, financial and social. In our locality the pre-eminent industries are and have been stock raising, wheat growing and fruit culture.

SPECIALTIES DISCUSSED.—We can only measure by comparison, so we will first consider the specialties. It was considered the palmy days of stockmen when thousands of heads of mustang cattle roamed at large, guarded only by their owner's brand, over space practically without limit and owned by a comparatively few persons, whose hired men (or vaqueros) led as wild a life as the Arab in his native home. The owners had plenty of money, but dwelling houses were no more plentiful than school houses are now. From our standpoint, there was no desirable success in this, as happy homes, and, in fact, all civilization were left out. With the advent of people who cultivated the soil, and the civil law they brought with them, this form of stock raising disappeared.

The next specialist was the big wheat grower, the man who bought every product he used, except wheat and barley. The amount of land each proprietor cultivated was told by the hundred, and often by the thousand, acres. The wheat kings were but little better than the cattle kings as community builders.

Our next specialist is the large orchardist. Orchards mean high cultivation, which goes hand in hand with high civilization. The orchardist has to depend on transient help to save his crop and profit. As he can furnish them with employment but a few months in the year, and then requires a large number, it is often a serious problem with him. If frost destroys his young fruit, as it sometimes does, he has no revenue for the entire year, while all his expenses for cultivation and family support are as usual, which is, to say the least, a very risky business.

WHAT CAN BE DONE IN MIXED FARMING.—Now, what have we in the line of mixed farming? Our resources are good soil, a very mild climate, and (with many) irrigation water, we will say, from December to the first of June, as an average. What can and shall we produce? As water is not sufficiently abundant to wet all our land let us sow our dry land to wheat, but our irrigated land we will use largely for alfalfa pasture, for we want to keep a good team of horses; a bunch of cattle, with what good milch cows we can handle conveniently; hogs that are good grazers and who will eat up all the hog melons, Egyptian corn and some of the wheat that we produce, and a few sheep to clean up the weed patches and a part of our wheat straw. But we must cultivate a part of our wet land to summer crops, including pumpkins, hog melons and Egyptian corn.

Our orchard, for we must have one, should have a variety of fruits for family use and a small surplus that can be dried for market by the family. A good well and windmill will furnish sufficient water for a garden large enough to supply the family with vegetables nearly the year round. Poultry should receive a fair amount of attention, for if properly conducted it alone can provide all the groceries needed and contribute largely to the family's bill of fare.

Had we government railroads run for the welfare of the public, instead of corporation roads run on the principle of "all the traffic can bear" for a few millionaires, we might double the list of available products, much to our own benefit as well as the consumers in the cities.

COMPUTATIONS.—Let us sum up a little. Our wheat is sown in the winter, when we and our team have little else to do. For $1 an acre we can hire it harvested ready for the market or granary, without interrupting our work in the least. We store on the ranch the amount we want to use for seed and feed, and sell for cash the balance. The straw is nutritious and valuable for stock food every month in the year. Even the stubble affords valuable pasture; hogs and sheep fatten on the fallen heads, and horses and cattle on the stubble itself. Our cows furnish butter for the table, and, if their number is large enough, a little ready money all the time to meet every day expenses. The skimmed milk is valuable for young calves, pigs and poultry. The increase in young stock always commands a ready sale at any time of the year. Hogs, with good management, increase rapidly, graze the year around, and fatten readily on much that they glean for themselves, if a little grain of some kind is added. They furnish the necessary bacon and the quickest money of any stock, except it be spring lambs, bringing good, sure, easy money. A few sheep eat up much that other stock refuse, and if your farm is well fenced, which it should be, they require but little attention. Their fall and spring clips of wool, as well as the lambs, are so much cash, while a well-dressed mutton never goes a begging on a ranch.

The orchard, with its immense varieties of fruit, is one of the crowning glories of our glorious California, and the farmer in our locality who has no orchard is sleeping on his rights.

The garden, while not a revenue producer, saves many a dollar that would otherwise go to China, adds to the health and comfort of the family and helps to solve the Chinese emigration question.

POULTRY.—I think that no other one product has done so much as poultry to make it possible for the early settlers to stay in their homes during the dry years. Poultry pays every day in proportion to the intelligent care you give it.

There are many minor things that might be mentioned, but these are the leaders.

ADVANTAGES.—There is this difference in favor of diversified farming: It brings the farmer an income at various times of the year, from a variety of sources. If any of them fail he still has others left. It enables him to produce more on his farm and to utilize everything produced. His work is distributed more evenly through the year, so if his farm is small he has to hire but little, if any help; if his farm is larger he can give his help continual employment. He does not have to have large and expensive machinery, to be idle three-fourths of the time. It does not tend to large expenditures and debt. It means better houses, more out buildings, fenced farms, more thickly settled communities and more of the advantages of civilization.

Winter Growth of the Beet for Stock or for Sugar.

It has been well known for many years that the beet makes good winter growth in parts of California where freezing is slight, but not enough has been made of this knowledge either for kitchen, stock yard or sugar factory. It is unquestionably true that we have often struggled to grow beets in the summer with short moisture and other trying conditions when we should have grown them during the rainy season. Mr. L. Hache of Oxnard calls attention anew to the above facts in a letter to the Anaheim Gazette, from which we take the following:

ADVANTAGES OF WINTER GROWTH.—I enclose translation of part of a letter published in the Journal Des Fabricants De Sucre, the principal technical paper of the sugar industry in France. I thought that it might be interesting to your readers, now that we are ourselves noting so plainly in the fields the immense advantages of early planting.

Just at the time when our Agricultural Department, after careful experiments, has reached the conclusion that it is possible in the mild climate of Ventura county to make a winter crop of the sugar beet, it is gratifying to find that similar experiments have led to similar conclusions in a foreign country, where the conditions of climate and rainfall are almost identical with our own.

It would seem that by following European precedents, as regards the time of planting, we are throwing away one of our greatest advantages. In order, however, to avail ourselves of the warm fall months to germinate the seed, the land must be prepared in advance. The fields that are to go into beets must be plowed deeply just as soon as the crop is off and before the teams are required for the beet harvest. To do otherwise will be to run the risk of failure, and I trust that in this respect all our farmers who intend to try early planting will follow the advice of our Agricultural Department.

Not the least advantage of fall planting is the fact that the beet will utilize all the rain that falls throughout the winter, and, under these circumstances, the amount of rain required to make a crop is materially diminished. Another great advantage that has been demonstrated fully is that early planting will give a perfect stand on strong alkali land. This makes available for beet culture a large class of lands that heretofore have only been considered fit for barley.

THE TRIALS IN ALGERIA.—In the French journal to which Mr. Hache alludes above there is a letter from G. Cureyras of Algeria, from which we take leading parts as follows: The growing during the winter season of forage and sugar beets has been undertaken here with entire success. This winter culture is a great novelty. Most of our fellow colonists are not aware of its possibility. Even I, who have grown beets for so many years in Algeria, was unaware of it six months ago.

But I have been unable to convince myself that it is possible, that it is easy, simple and exceedingly productive. Before these recent experiments my crop, as in Europe, grew during the summer. I could only get a crop through irrigation, for it never rains in Algeria during the summer, but, thanks to irrigation, I always obtained good crops—sometimes very good ones. But water is abundant only in a few localities. I had always thought, until lately, that beet culture would be limited to these irrigated areas. But I was wrong, and the contrary has been completely demonstrated.

These experiments have been made in several localities, in different years, with seeds of different kinds, and they show that winter culture can give excellent results.

ADVANTAGES OF WINTER CULTURE.—It seems needless to point out the importance of this fact. Winter culture, as its name implies, begins in the fall like that of cereals. The winter rains are amply sufficient for it.

The restricted area, therefore, which heretofore was considered suitable for the beet, is now indefinitely extended. Needless to add that the lands where, thanks to irrigation water, it is possible to correct the vagaries of the seasons and to supplement the rain if it should be short, will still have a great advantage over others not so favorably situated.

THE DEMONSTRATION. — Among the experiments that have come under my notice I will only cite two. They both have the advantage of being carried out by two professors of agriculture. The names of these professors, who worked far from each other and in different conditions of climate, are an absolute guarantee of accuracy. The first series of experiments bore entirely on forage beets. The second series of experiments were made at Didi-Vel-Abbes, also during the winter season. They were made by Mr. Isman, professor of agriculture, whose previous experience qualified him particularly for the culture of the beet.

Mr. Isman chose the richest sugar beets. He planted on the same day, December 13th, seven varieties of these beets on land that could not be irrigated. The following June the leaves of all the varieties were wilted, and he proceeded to sample for analysis. The following result shows the great superiority of these beets over those obtained in Europe:

Variety—	Average Weight, Lbs.	Sugar, Per cent.
Bourdon-Marmilhat	681	21.2
Bourdon-Palbost	864	18.75
Simon-Legrand	882	19
Desprez	871	19.5
Vilmorin	937	18
Dippe	974	17.6
Klein-Wanzleben	937	19.2

The purity was very high in all cases.

THE BEETS.—The weight of the individual roots is small, but this is due to the fact that they lacked water as soon as the warm weather came on at the time when it was most needed for development.

A few irrigations at the proper time would have certainly doubled the weight, and it is probable that in spite of this increase in weight, the richness would have been still higher had the experiment been carried further instead of stopping in June. The beets had only, during a small part of their growth, the sunlight and heat, which are admitted to be the factors which produce sugar in the root.

What to Do With Southern Coast Uplands.

By L. B. CADWELL, Carpenteria, at Santa Barbara Farmers' Institute.

Having long been living on the foothills, I will try and give some of my observations as to the particular uses for which these lands are fitted. The first important use, then, is as a spot for a home. Here, on these little elevations, no frost comes in winter,

and the gentle breeze of the summer sweeps up to us from the sea, unobstructed by surrounding orchards and buildings. The lovely views of the ocean, islands and valley, with mountains as a background, never grow old, but lend new delight to the heart every day. For these reasons the foothills form an ideal site for a home, and will ultimately be occupied extensively by such homes.

As an agricultural proposition these lands have, in most cases, not proven profitable, but there are certain uses to which they can be profitably put. Corn and beans do not average paying crops, and such land as is not necessary for the growing of hay for home use (as the amount grown does not justify raising hay for market) must be put to some other use.

IMPROVING CLAY SOILS.—The first thing to do with thin, clayey soils is to put on plenty of barnyard manure, applying it early in the winter so as to thoroughly work it into the soil, while the rains will decompose and incorporate it into the land. This will render the soil loose and friable and keep it from running together, packing and baking, as these clayey soils are prone to do. Now, with the land thus enriched and aerated, fine-flavored vegetables and fruits can be grown much superior in quality, but less in quantity, to those grown on bottom lands.

FROSTLESS PLACES.—The absence of frost renders it almost useless to try growing such fruits as apricots, peaches, prunes and fruits of like character, as the flow of sap not being checked or kept back at the proper time these fruits bloom at irregular times and often neglect blooming at all at the proper time. But such fruits as the lemon, orange, olive and loquat are in their element here, and grow better flavored fruit than can be grown on the lowlands, and they bear plentifully on these soils. By the use of barnyard manure, as a fertilizer and as a mulch, these fruits can be grown with a much smaller supply of water than is commonly supposed; and I know of the successful raising of good crops of these fruits on this soil with only one or two irrigations during the summer, in the dry season of the last three years. Careful cultivation is a saver of irrigation.

EUCALYPTUS GROWING.—Beets can be successfully grown without irrigation, but they seem to exhaust the vitality of the soil in a greater degree than any other crop. The greater value, however, to which waste land and land that is so poor as to be almost waste land, and inaccessible to water, can be put is to be planted to some kind of timber for wood and lumber. I will refer you to the experience of my father, O. N. Cadwell, who in May, 1897, after all rain had ceased for the season, successfully planted out with hand trowels, and using no water, about ten acres of Australian blue gums. These trees were small seed bed plants, only a few inches in height, and were put in the very poorest, rockiest and seemingly most worn out land on the place. This land had been carefully worked—that is, plowed and cultivated—and was consequently in nice shape for setting. No manure or fertilizer had been used, and the trees were put in rows 12 feet wide and 5 feet apart in the rows. After planting, a weed knife was run through the rows once or twice the first summer, since which nothing has been done with them, and, although the three winters following the planting were very dry—not even 25 inches of rain having fallen in all that time—these trees now range from 8 to 40 feet in height and from 6 to 22 inches in circumference. A large amount of good wood and kindling could now be cut from these trees and the trees be benefited thereby. Now, in the four seasons in which this land could have been sown to hay the whole four seasons combined would not have produced more than one profitable crop of hay, which would have taken four plantings of seed and the same number of workings of the soil, instead of one planting and one season of work, as was the case in the setting of the blue gums. For the past two seasons some good calf pasture has also been had in the trees, almost as much feed as if the field had been sown to hay, in fact.

ACACIAS.—Another point in tree culture has come under my observation. Mr. Whitford of this valley cut a black wattle tree about ten years old, which he raised from the seed, and took the trunk to a planing mill at Santa Barbara and had some boards sawed from it. These boards were several feet long and 8 to 10 inches wide. This little circumstance brings up the query, Can we not get some kind of timber to grow on these hitherto unprofitable soils which will at least furnish box timber for the lemons and other fruits that are growing on the more favored sections?

THE DAIRY.

Color Points in Jerseys.

TO THE EDITOR:—Will you please tell me if it is necessary for a thoroughbred Jersey to have a black tongue? Also if there is a standard for Jersey? If so, where can I obtain one?—SUBSCRIBER, Santa Cruz.

TO THE EDITOR:—In answer to your subscriber's inquiry concerning Jersey cattle, I will state that it is not at all necessary that a thoroughbred Jersey should have a black tongue, or even black marks of any sort. "The Jerseys are of all shades of color, from a pale yellow fawn running through all the intermediate hues, even occasionally to a black or gray known as French gray, and that merging into black with an amber-colored band along the back, the muzzle invariably shaded with a lighter color, and individuals are often seen black and white, or pure black, unrelieved by any other color."—Herd Register, A. J. C. C., Vol. I.

This authority is a little ambiguous, but the idea intended to be conveyed is that the Jerseys, with the exception of black and white, and the intermixture of grays, are invariably of some shade of fawn, from almost white, through reddish, yellowish, brownish, up to blackish fawn, often spotted with white, or shading into white in light-colored and into black in dark-colored animals. Rules for entry into the cattle clubs concern only the markings by which an animal may be identified, and not the color itself. The principal characteristic of this breed, as regards appearance, is the typical Jersey shape, which is more deer-like than in any other breed of cows, accompanied by the lighter colored muzzle and the buff ring around the eyes. There is a standard scale of points used in judging animals, but, not being of a descriptive nature, this would not enable a person to identify a Jersey by its use alone. JOSEPH MAILLIARD,
Secretary Pacific Coast Jersey Cattle Club.

Pacific Coast Jersey Cattle Club.

TO THE EDITOR:—Owing to the fact that there is a renewed and increasing interest in Jersey cattle on this coast, and because so many persons (not members of the Pacific Coast Jersey Cattle Club) who may wish to register or transfer animals would like to know of the change of office and officers of this club, I take the liberty of sending you an item concerning the meeting held on the 16th inst.

Members, of course, will be notified of these changes, but it is hard to get such matters before the general public, especially when they concern a non-money making and non-advertising organization. This club has been in existence for eighteen years, having been founded by the leading Jersey cattle breeders of this coast on account of the fact that there was a number of pedigreed animals here which could not be registered in the American Jersey Cattle Club, by reason of neglect of the owner of some ancestor to register his animal, or, in some cases, where the markings or perhaps date of service had been lost. Yet many people are unaware of its existence. For various reasons the interest shown in the different breeds of cattle is constantly ebbing and flowing, as it were, and was on the ebb for a number of years, yet numbers of animals were constantly being recorded, and of late the increase in registrations and transfers shows that the flood-tide has set in strongly, proving that people are commencing to appreciate the Jersey as an economical butter producer.

At a meeting of the Pacific Coast Jersey Cattle Club, held on May 16, 1901, the following officers were elected: President, Col. C. L. Taylor of San Francisco; secretary and treasurer, Joseph Mailliard of San Geronimo, Cal.; executive committee, R. G. Sneath, W. W. Camron and E. C. Sessions.

The office of the club was removed from 14 Sansome St. to 307 Sansome St., Room 1, San Francisco, Cal. All applications for registration, transfers, membership, etc., as well as changes of address of members, should be sent to this office.

JOSEPH MAILLIARD, Secretary.

The Care of Milch Cows.

By H. S. BACHMAN at the Farmers' Institute, Poplar.

The care of a milch cow should begin with the heifer before she has her first calf. If she is gently handled and well fed before calving, as a usual rule she will not be any trouble to break to milk and will make a kind and gentle cow.

The calf should be taken away within twelve hours after it is born and not allowed to suck the cow afterward, but should be fed on the new milk for two weeks and later it may be fed on skim milk.

It is, as a general rule, very hard to have a good milch cow and let the calf suck it, and it is far easier to feed the calf than to have a big calf pulling on a rope to get to the cow and the cow refusing to give down her milk until her calf comes. It is also the tendency of all cows that the calves suck to go dry as soon as the calf is weaned, and a cow of that kind is not a good milch cow even though she may give a good mess of milk for five or six months. The good milch cow should give milk at least ten months out of each year, and should not be dry over six weeks to two months before calving.

A heifer with her first calf should be milked as long as possible, even though the milk does not hardly pay for the milking—if possible, to within six weeks of calving, in order to have a cow that will give milk the greater portion of the year, for, as a usual thing, a cow will go dry at about the same length of time after calving; and if she forms the habit of going dry in six months after calving, she is not as valuable as she would be did she give milk ten months, as it is the milk that we are after.

In feeding milch cows on alfalfa or other pasture it is a good thing to feed a little hay with the pasture or to have straw for the cows to eat, as it keeps the milk from tasting so much of the green feed and also is a great help to keep them from bloating on alfalfa or alfilaria.

It is of the utmost importance in taking care of milch cows to be gentle with them and not to dog them or run them to and from the pasture. Nothing will show the effects of either good or bad treatment quicker than a cow giving milk.

Transfers of Jersey Cattle, May, 1901.

PACIFIC COAST JERSEY CATTLE CLUB.

Name of animal and H. R. number, and by whom transferred.	To whom transferred.	Date of Certificate.
BULLS.		
Joe Bowers, 685 / J. I. Gilmore	A. R. Cruikshank	May 15, 1901
Duke of Shelhurn, 687 / Mark Hulhurt	Oshorn & Brown.	May 29, 1901
King of Hillsboro, 688 / H. West	Wm. McQuillan	May 31, 1901
COWS.		
Daisy D., 1482 / S. W. Church	Mrs. J. C. Haverly	May 3, 1901
Gwen R., 1516 / E. D. Roberts	M. S. Ratliff	May 18, 1901
Scio Bell, 1612 / Mark Hulhurt	L. C. Stover	May 18, 1901
Lockey B, 1613 / G. L. Burhank	L. C. Stover	May 18, 1901
Gladiola Belle, 1615 / H. West	J. J. Wright	May 31, 1901
Gasila Rosa, 1616 / H. West	J. J. Wright	May 31, 1901
Gasila's Dotty, 1617 / H. West	J. J. Wright	May 31, 1901

THE VINEYARD.

Prevention of Frost by Cannon and Smoke.

The last number of the Gironde, a Bordeaux newspaper which represents the wine growers of that region, contains an article by Mr. Bellot des Minieres on the subject of preventing frosts from injuring early fruits. His theory is that it is not the frost which blasts the budding fruit, but the sun's rays following a night of frost and finding in the grape, already sensitive from the cold, an object unable to withstand their heat. After many experiments, which he says have always succeeded, Mr. Bellot des Minieres recommends the accumulation at various points in the vineyard of combustible material, capable of producing a thick, black smoke, and setting fire to these heaps of fuel at sunrise, so that a veil of smoke may cover the entire ground, protecting the vine by its opaqueness against the sun's rays and maintaining the general temperature of the vineyard at a point which will counteract the effects of the frost. The smoke, which acts as a warm blanket, lifts gradually enough for the vine to adapt itself to the changed temperature.

Since I reported on the subject of firing cannon for the prevention of hail storms the use of cannon for other allied purposes has been discussed in agricultural circles. Dr. Marangoni, professor of physics at the Royal Lyceum of Florence, Italy, has declared his belief in the efficacy of the use of cannon for the prevention of frosts. He says:

> There are astonishing resemblances between the state of the atmosphere which produces hail and frosts. * * * An absolute calm is necessary for both. * * * In the phenomena of the white frost * * * the calm creates a very cold layer of air near the surface of the earth, saturating the otherwise dry air and at the coldest moment the frost is formed. * * * The important object to be achieved in the case of both hail and frost is to break the calm before either is formed.

He recommended that the cannon be fired horizontally over the ground to be protected. Under his direction cannon were fired horizontally over the vineyards of Count Balli, at Asti, and he relates that a strip of vineyard 500 feet wide over which two cannon were fired was entirely protected, while the vines on each side were badly injured by the frosts.

At the central office of the agricultural societies in this part of France I was told that extensive preparations are being made to test the efficacy of cannon against frost this spring. One of the gentlemen who is working on this question said to me:

> The firing of the cannon produces perturbations in the atmosphere, causing a slow transition between the coldest hour of the night and the coming of the heat of the sun.

It has just been determined to hold an international cannon congress in Lyons next November, in which this subject will be fully discussed, and I am requested to say that American representatives are invited to be present and to take part in its deliberations. As an invasion of grasshoppers is announced for this summer in southern Algeria, cannon are to be tried against them also.

JOHN C. COVERT, Consul.

Lyons, France, April 23.

Agricultural Review.

ALAMEDA.

BIDDING FOR FRUIT.—Niles Herald, May 31: A number of fruit buyers were in the township this week seeking to get control of the apricot crop at $25 per ton. Some people sold, but the greater portion will hold for better prices. Buyers are also seeking the grapes grown about the Mission and offer $25 per ton. Some have sold at $30 already, so there is no rush to sell at the smaller price. Hunt Bros. of the Haywards cannery have been seeking cherries for canning at 4 and 5 cents. The market price is from 5 to 7 this week. Cherries shipped to New Orleans do not carry well and are only netting 75 cents per box; $1 is obtainable in Arizona and New Mexico.

BUTTE.

GROWING COTTON LOOKING WELL.—Gridley Herald: Some of the cotton planted in this vicinity is growing nicely, and if it will mature this season it can be made a profitable crop any season. The seed planted was put in late and had but one rain, still it is growing nicely.

CONTRA COSTA.

CANNING ASPARAGUS.—Antioch Ledger, June 1: The Black Diamond Cannery will can 1000 cases of asparagus this year. The grass will be put up in round cans instead of square cans, as is the general custom. A representative of the cannery has been around trying to contract for the grass at 3½ cents per pound.

STRAWBERRIES AND ONIONS ON TULE LAND.—Antioch Ledger: On the Joe Joseph place, east of Antioch, an acre and a quarter of tule land is planted to strawberries. Last year this small piece of land netted the family over $600, and this year already it has netted over $600 worth of berries from the same acre and a quarter. The whole income from the land is considered as profit, as all the labor on the patch was performed by members of the Joseph family. They say that even had they had to hire all the work done it would not have cost more than $200, leaving a handsome profit of over $400 on an acre and a quarter of tule land. James McAravey assures us that from three acres, which he had planted to onions on Jersey island, if the land had not flooded, he would have realized at least $1000 for the crop. Is it any wonder that fortune tempts people to engage in farming in the tules when these figures are considered? If they only get a crop off the land three years in ten the profits are very satisfactory.

FRESNO.

A FINE LOT OF DAIRY COWS.—Hanford Journal: G. S. Hewitt, formerly a resident of Hanford, but who is now in the dairy business near Selma, arrived here Wednesday with five carloads of fine dairy cows and calves. The cattle are of the Holstein, Guernsey and Ayrshire stock, and were purchased in New York, Wisconsin and Ohio. Mr. Hewitt purchased the cattle for himself and a number of other farmers in this neighborhood, and also for parties in Conejo and Fresno. One carload of the cattle was left here, two carloads at Conejo and two at Fresno. Mr. Hewitt says he has had excellent luck with the stock during the trip, only two of them dying, and these being young calves that were trampled to death.

STARVING HORSES.—Fresno Republican: William Harvey, secretary of the Society for the Prevention of Cruelty to Animals, recently preferred a complaint against two men—whose names were unknown to the complainant—charging them with mistreating a band of horses. Sixty-one head of horses, shipped from Arizona, had been turned by them into the corral at the Santa Fe depot, and had been left by them without sufficient food for thirty-six hours. Two tons of loose hay had been put in the corral, but what was not eaten the first night was trampled. One of the horses fell from exhaustion, and one of his legs was broken by other horses trampling him. He was ordered killed. All the horses were in a starved condition when they arrived here. The railroad company agreed to feed them while they remained in the corral. The men who shipped them here started for Visalia. The warrant for their arrest was given to Constable Dumas.

KERN.

BUGS HAVE RUINED WEST SIDE GRAIN.—Delano Record: About three weeks ago green bugs attacked the irrigated grain of J. C. Heitzeg and G. Panero in the artesian belt northwest of Delano and has damaged it to such an extent that it will have to be cut for hay. Their grain looked very promising until the appearance of the bugs and would have made fully six sacks. Mr. Heitzeg says all of the grain west of Alila will suffer from the ravages of the insect. The bug is of a peculiar species that he has never seen before. It has a large head and when it gets its stinger into a kernel of wheat it makes short work of it, sucking out all of the vitality.

KINGS.

LIGHT RAISIN CROP.—Hanford Journal: The concensus of opinion among the leading raisin growers of Kings county is that the crop of raisins for 1901 is going to be short. The fruit has not set well, the bunches being scarce on the vines, while the vines themselves never looked healthier or were growing thriftier. This fact is thought to be due to the frost, which nipped the fruit just as it was beginning to appear. Some healthy vines have not a grape on them. While the grapes are still very small, enough can be seen to tell whether the first crop will be heavy or light, and there seems to be little doubt but that it will be very light. There will probably be a heavy second crop, as the vines are healthy and the first crop will be light, but this second crop cannot be depended upon to make raisins, and it will probably all, or nearly all, go to the wineries, as it is seldom a season comes when the conditions are favorable to drying the second crop.

AN ENTERPRISING BANTAM.—Hanford Journal: County Treasurer Slavin has a bantam hen among the fowls in his yard in this city. The little hen is less than five months old, yet she has laid, set and hatched chickens. She will certainly be a greater curiosity than ever when those chicks get grown, or even half grown, as Mr. Slavin took the eggs she laid in a stolen nest and substituted nine eggs of the common-sized fowl, which was all the little hen could cover in setting. Doubtless the little mother hen will be surprised at her family of young giants when they are full grown.

LAKE.

APPARENTLY DEAD TURKEYS RESTORED.—Clear Lake Press: Seventy-five young turkeys were chilled by the rain the other day till they apparently died. Their owner wrapped them up warmly and coddled them snugly, hoping thereby to revive perhaps a few of them. The whole seventy-five came to under the ministrations, and now six dozen happy young turks are gamboling about that ranch in happy unconsciousness that Thanksgiving day will come, when the gobbler must be gobbled.

SACRAMENTO.

SUITS ON COYOTE SCALPS.—Suits have been commenced in the Sacramento County Superior Court by the San Francisco Law and Collection Co. through T. Carl Spelling, an attorney, against the State for the recovery of $11,770 alleged to be due claimants in various counties on account of coyote scalps. At the session of the last Legislature an act was passed permitting the holders of all unpaid claims to bring suit against the State. As these outstanding claims aggregate $575,000, it will be seen that the plaintiff in the suit has had only a small portion of them assigned to it.

SAN BERNARDINO.

HIGHLAND ORANGES.—San Bernardino Sun: The orange shipping season is practically ended in Highland. There have been 636 cars of citrus fruits shipped from that station for the season of 1900-01. There are perhaps two or three cars of late varieties of oranges and a number of cars of lemons to go forward yet. The orange groves of the section are generally in fine condition and are heavily set with young fruit. With abundance of water, which can now be had for 10 cents an inch for twenty-four hours' run, the prospect for the coming orange and lemon crop is very promising.

SAN JOAQUIN.

FINE SAMPLE OF GRAIN GROWING.—Lodi Sentinel: A bunch of wheat stalks from the lower Kettleman ranch is on exhibition. The growing wheat stands over 6 feet high and the heads measure 5 inches in length. They are filling rapidly and give evidence of a large yield.

LARGE STRAWBERRIES.—Lodi Sentinel: S. Van Vlear, who has a few acres of ground on Cherokee Lane, near Lodi, exhibits some of the finest specimens of strawberries ever seen here. The berries were as large as new potatoes, and it took but nine of them to fill a basket. They are from vines set out on flat ground last fall, and there is a plentiful crop of them.

WATERMELONS WILL BE LATE.—Lodi Sentinel: The peculiar freaks played by the weather this spring has been anything but pleasing to the watermelon growers. When the time came for planting the ground was too dry for the seeds to germinate, and as a result there was much more replanting than usual. Then the cold weather set in and has been giving the young vines a hard race of it ever since. The vines are not nearly so advanced as they should be and the crop will be very late. This, in the face of the fact that a larger acreage is planted than in five years, gives melon men a rather dismal feeling just now. They will not be able to get in on the first market, but will come in later, when the Fresno crop is about off the fields.

SANTA BARBARA.

LOMPOC CROPS.—Record: Bean planting is at its height just now. Corn and squashes will come later. Labor has advanced to $2 per day on account of the scarcity of men. The cherry crop, which promised so well when blooming, was cut very short by the tinge of frosts just at a time when most susceptible to cold. So also were the apricots badly injured. Peaches will be up to the average in good years, while apples and pears never fail. A hundred thousand boxes will be the probable output the coming fall. There are some most excellent crops of barley and mustard on lands in the valley that have hitherto been considered of little value. These lands, with water sufficient to force alfalfa, will prove equal to our best for profitable production. Since the rain red oats have improved immensely, and promise in places quite a crop. The greater part will be cut for hay, which is conceded to be far superior to barley or wheat hay for both horses and cows. While barley is ready to cut for hay, these oats will require from one to two weeks more to mature properly for hay.

LOMPOC'S BIG MUSTARD CROP.—Los Angeles Times: The mustard growers of Lompoc have organized, with H. H. Hall as president and W. E. Collis as secretary. A canvass has been made to secure signers to a pledge to hold their crops for 3½ cents. The pledge was to be given on condition that four-fifths of the acreage in the valley be secured by the Association. It is estimated that 5000 acres of mustard will be harvested, and it will consequently be necessary for the Association to secure at least 4000 acres. About two-thirds of that amount is reported pledged. Rumors are afloat that the mustard growers have been offered by outside parties 3½ cents per pound for the whole crop. A conservative estimate this year is ten sacks per acre, a sack weighing about ninety pounds; 50,000 sacks, or 4,500,000 pounds, at 3½ cents per pound, will give some idea of the colossal size of the deal.

SANTA CLARA.

LEMON TREES MAKE A BIG SHOWING.—San Jose Herald: J. P. Bubb, who has a fine ranch in Cupertino district, has one lemon tree that for fruitage probably leads all competitors. On April 2d he began picking and picked 500 merchantable lemons on that day. Since then he has gathered from the same tree until on Friday of last week he had picked from the one tree 1918 lemons, and there were on that day between 200 and 300 more ready to pick. These were all merchantable, and that number does not include the green ones. Mr. Bubb has eight such trees, each of which will yield nearly as much. Besides these Mr. Bubb has an acre and a half of young lemon trees, which are yielding nearly as well, according to age, and as he is realizing 8 cents per dozen for each one marketable, it would seem lemon raising was profitable. Mr. Bubb's ranch is located in the foothills and is protected from frosts.

ANGORA GOATS FROM TURKEY.—A San Jose dispatch says: "Several Angora goats smuggled out of Turkey by Dr. W. C. Bailey for his father, C. P. Bailey of this city, have arrived here safely. [See Dr. Bailey's letter in last week's PACIFIC RURAL PRESS.] This is the first importation of this kind made into the United States from Turkey in twenty-seven years. The goats are of the regular Angora type. They are completely and thickly covered with fine, lustrous mohair, entirely free from kemp, have long, drooping ears, light horns and sharp, handsome noses.

SANTA CRUZ.

LADYBUGS DESTROY WOOLLY APHIS.—Watsonville Pajaronian: The colonies of ladybugs which were brought here from Chualar last year by C. H. Rodgers did effective work in cleaning out woolly aphis, and Mr. Rodgers proposes to have more of them brought in to fight that pest. These ladybugs do not appear to take to the Pajaro valley as a home. They are very plentiful at times at different points in the Salinas valley and along its foothills and they can be easily trapped in large quantities. They will fight and clean out the woolly aphis, and it will pay orchardists to follow the example of Mr. Rodgers and others and import colonies of these friends of fruit growers.

SOLANO.

GOOD PRICES FOR EARLY FRUIT.—Vacaville Reporter: The first box of Royal Ann cherries shipped by Pinkham & McKevitt sold for $8, and, in a car sold on the 20th, twenty boxes of the same variety brought $4.15 per box. A small lot was also sold the same day which brought $5.10 a box. The box of peaches shipped by Jas. Burton on May 14th arrived in Chicago on the 23rd, and sold at $5. These were the first peaches sent from California this year, and they were in splendid condition. They were consigned to Porter Bros. & Co. and went by refrigerator car.

SUTTER.

INCREASING SIZE OF FRUIT BY IRRIGATING.—Sutter Independent: A D. Cutts, proprietor of the Riverin Orchard near Live Oak, has commenced to irrigate his trees. He has an extensive irrigating plant and has made irrigation profitable. An abundance of water gives size to the fruit, a feature the canneries so much desire. Many other large peach orchards near Yuba City have taken up this mode of increasing the size of their fruit and find it a practical scheme.

VALUE OF BEES TO FRUIT GROWERS.—Sutter Farmer: In several of the cherry orchards near this place the crop has been larger than usual and well distributed over the trees. In conversation with a local grower recently he attributed the good crop largely to the presence of a large number of bees which he had installed in one of the centrally located orchards. Shortly before the blooming season he had a bee man bring a lot of hives of the busy workers to the orchard and kept there until the fruit set. The bees evidently had much to do with the thorough pollinization of the blossoms as the excellent fruit crop showed.

TEHAMA.

BEETS DOING WELL.—Red Bluff News: The weeding force on the Finnell beet lands near Tehama has been gradually increased until at the present time about 400 people are employed. The beets are in excellent condition and it is expected that a large crop will be realized.

TREES LOADED WITH FRUIT.—Red Bluff News: F. A. Weast took a trip among the Antelope valley orchards and at the Diug Sang Co.'s orchard and garden on Antelope creek. On the Cone ranch he found that the Muir and Crawford peach trees were hanging so heavy with fruit that the orchard men are already beginning to prop up the branches to keep them from breaking down. He says there will be a medium crop of apricots on the place and that some of the trees will bear pretty good crops. He brought with him a branch from a prune tree that was covered with healthy, fair-sized prunes. They were so thick on the little branch that they look almost like a cluster of grapes. The branch was not more than 2½ feet long and on it there were fully 125 prunes.

SALE OF A LARGE ACREAGE.—Red Bluff News: The Herbert Kraft Co. have made a sale of 9500 acres of range land to Cone & Ward. The land lies on the east side of the river, between Mill creek and Deer creek, and is considered as fine grazing land as may be found in the county. The same land has been rented by Cone & Ward for the past ten years and used by them for sheep range.

THE SEASON'S PLANTING.—New Era: There has been planted in the several Maywood colonies this season about 120,000 deciduous fruit trees, 100,000 olive trees and 8500 orange and lemon trees, making a total planting of about 228,500 trees. Included in this amount is the replacing of last season's planting that died.

TULARE.

HAY DESTROYED BY SPONTANEOUS COMBUSTION.—Tulare Register: L. Weaver lost a stack of hay by spontaneous combustion. There were eighty tons or more, being eighty big loads. The bottom was put in of alfilaria and foxtail before it headed. This became hot and was opened out and left for a month or so. Later on this was thought to have cooled off and grain hay was stacked on top.

YOLO.

THREE-HEADED BARLEY.—Woodland Democrat: Gordon Marshall exhibits a sample of three-headed barley which he declares is far and away ahead of "Uncle Billy" Sim's six-rowed barley. It is of the variety used for brewing bock beer. Mr. Marshall has twenty-five acres of it. The field was originally set to alfalfa. The stalk is so rank that it has fallen down. In many instances there are three heads growing on one stalk, and a second crop has started from the roots and first joint and is heading out.

THE HOME CIRCLE.

Memorial Day.

Once more we gather under skies of May,
When lilac blossoms, and when violet blows,
And on these grassy graves we weave a spray
Of Northern lily and of Southern rose.

Once more we hear the blue-bird's song afloat,
The thrush's piping in the dewy dell;
We thrill to hear the Northern robin's note,
And stand ensnared by Southern mock-bird's spell.

Once more the winds through odorous orchards blow,
The creamy hawthorns through the fences twine;
Lo! all the sunrise splendors are aglow,
Like cataracts of red and golden wine.

We bring a wreath, O martyrs numberless,
Who perished that your country still might live;
Who fought and bled, the unborn babe to bless,
That we should still be brothers, and forgive.

But now we come, not as in bygone years,
When anger poisoned sorrow through and through;
When no one cried, through blended love and tears,
"Forgive them, for they know not what they do!"

Thank God, those days have now forever passed,
With all their strife of party, clique, and clan;
The Northerner, the Southerner, at last
Is simply, solely, an American.

On Santiago summits we unite
The grizzled foes of Chickamauga's day;
The hatreds of a Shiloh sink from sight
Beneath the waters of Manila Bay.

Above your graves, exultant anthems swell,
When Peace and Love have healed the battle's blows;
We flush with pride to think those fought so well
With these, so brave to overcome such foes.

Peace be to Lee, whose honor shall not cease;
To Stonewall, of the valor-vibrant name;
Peace be to Grant, who longed so much for Peace,
To Lincoln, of the everlasting fame!

—Harper's Weekly.

How Letitia Kept Decoration Day.

Letitia came down the path and into the room with a joyful little hop, skip and jump. The room was small and dark, and a pile of black cloth on the table seemed to make it darker. Letitia stood still for a moment until her eyes became accustomed to the gloom, but her tongue did not have to wait.

"Cousin 'Liza?" she began.

The woman, who was standing beside the table cutting a boy's jacket out of an old coat, looked up for a moment and then bent over her work. "It's you, is it, Letitia?" she said.

"Yes'm," answered Letitia. She made her way around the table and stood beside her cousin, waiting until she could speak. She knew by long experience when it was wise to do so. At last she drew a long sigh of relief; there was very little margin left, but Cousin 'Liza had "got it all out" without piecing.

"Now, Cousin 'Liza," she said, happily.

"Well, what is it, child?" answered Cousin 'Liza, carrying her work to the window and beginning to baste up the seams.

Letitia drew a small stool to the window opposite her cousin. The light fell upon her happy face and shining eyes.

"It's just the loveliest thing, Cousin 'Liza!" she said. "You see it's this way: Next week is Decoration Day. There's always been Decoration Day, I guess, but I never knew about it before. So Miss Carrie's going to give us a holiday, and in the afternoon we're going to put flowers on the soldiers' graves. We're to form a procession, and the girls will wear white, some with red ribbons and some with blue, so's to make red, white and blue, you see, and the boys will wear tiny flags in their buttonholes; and the minister's going to the cemetery; and there'll be singing—we practiced some to-day—and isn't it lovely? I am so glad we have Miss Carrie this year; she thinks of the nicest things!"

Cousin 'Liza shut her lips tightly. She dared not look at the radiant little face opposite her.

"I don't approve of it at all," she said, stiffly. I think Carrie Adams has too many new-fangled notions. 'Taint proper to my mind."

All the happy light faded out of Letitia's face, but she did not say one word. Cousin 'Liza looked at the child, battling so silently and so bravely with her disappointment, and her voice grew sharp with the pain of it.

"I never did see why men should get all the honor," she said. "I guess the women had just as hard fights at home and nobody ever thought of honoring them."

Letitia looked up wonderingly. "Why, Cousin 'Liza, did they?" she exclaimed.

"You jest ask Bathsheba Briggs and Nancy Anderson; I guess they'll tell you."

Letitia sat on her stool thinking very seriously. Just outside the window was a lilac bush covered with cones of purplish buds; as it swayed in the wind its leaves make a flickering tangle of sunlight and shadow at Letitia's feet. Suddenly her face brightened; she went over to Cousin 'Liza and leaned coaxingly against her.

"Cousin 'Liza," she said, "if I can't go with the others to decoration, can I go over and see Miss Page and old Mrs. Price to ask them about war times? They ain't men, you know," she added, seriously.

Cousin 'Liza looked uncomprehendingly at her for a second—she had already forgotten her own excuse; then a grim smile touched her lips. "Well, yes, I guess you can," she said.

"Oh, thank you so much, you dear Cousin 'Liza!" cried Letitia, kissing her, enthusiastically. "I'm going up stairs now; I'll be sure to be back time enough to pick up the pieces and set the table."

After she had gone Cousin 'Liza's work dropped into her lap and her forehead roughened as if with pain.

"There's no use fussing," she said. "I dunno how we're going to get through, anyway; and I can't get the child a white dress. And she shan't go without it! I ain't going to have people say I can't support her! She's got to give it up, that's all." She bent over the coat again, but there was some trouble with her eyes. Once or twice she rubbed them impatiently; nobody guessed what she suffered in refusing Letitia "things like other girls."

When Letitia came back she was as bright as if she did not know what disappointment was. She knelt down on the floor and carefully picked up all the ravelings and pieces, her tongue going merrily all the while. At supper she glanced out of the window to the lilac bush.

"When do you suppose it will bloom?" she asked.

"I guess, likely, by next week," answered Cousin 'Liza.

Letitia smiled contentedly, but said no more.

The next morning she started for school as usual, stopping at the gate to wave good-by to Cousin 'Liza. As Letitia turned from the gate, this morning, her face grew sober; but she walked steadily on. A group of girls were standing in the school yard, and they called her eagerly.

"Letitia, what color ribbons are you going to wear?"

"Oh, Letitia, my mother says I can have a new dress!"

"Letitia, let me march with you?"

"No, I want to. I said so first!"

Letitia looked soberly around the group and a little quiver choked her voice.

"I guess it won't make any difference—about the marching, I mean. I can't go."

The girls looked at her in amazement.

"Letitia Banks, what do you mean?"

"Why, Letitia, you've got to! We can't get along without you; you're our best singer!"

"Won't your cousin let you? Well, I think she's just the stingiest—"

Letitia turned quickly. Her usually gentle face was flushed with anger.

"I don't know what you mean, Lucilla Andrews! I guess my cousin's just the nicest cousin in the world! I thought you were my friend." She broke off and walked away to the end of the play-ground. Just then Lucilla ran after her penitently.

"Don't get mad, Letitia! I'm real sorry—I truly am. It was just because I was so dreadfully disappointed."

"So was I," answered Letitia, still soberly. "I didn't mean to get mad. I guess I feel crooked some way today," she added, slowly.

The bell rang then, and they had to go in. Letitia took her seat, still with a serious face, for Miss Carrie was to tell more about the Decoration Day plans; she wished that she could study during the talk, and she began thinking over the products of South America, yet drifting between them came the teacher's words. Miss Carrie was telling about a committee to investigate records, and see that all the graves and all the old soldiers were honored. Suddenly a thought came to Letitia, and she forgot all about the products of South America, and almost spoke out loud. "Why, how funny. I'll have to be a committee all by myself," she said.

For the next week Letitia was very busy. Cousin 'Liza let her have nearly all her afternoons for play, and Letitia spent them in making visits or in working up in her room. Cousin 'Liza asked no questions; she was contented to see the child happy.

One night at supper Letitia looked up suddenly. She was just lifting her glass of water, when she put it down and stared at Cousin 'Liza with eyes shining with a new thought.

"Why, Cousin 'Liza!" she exclaimed.

"Well, what?"

"Were you alive in the war?"

"Of course, child! What put that in your head?"

"Oh nothing," answed Letitia, with a happy little laugh; "only—it's so queer I never thought of it before! I guess those lilacs will be lovely next week. You don't care if I carry some to old Mrs. Price when I go next Thursday, do you?"

"Land no, child. You can have the whole bush if you want it; I don't care."

Letitia opened her mouth to say something; then she changed her mind and only smiled happily across the purple top of the lilac bush.

Decoration Day was warm and bright, and as soon as the dishes were washed Letitia went out in the yard to get her lilacs. She cut very carefully, leaving some still on the bush. Cousin 'Liza was busy in the kitchen. Letitia ran hurriedly up stairs and came down with something that she put on the sitting-room table; then she picked up her lilacs and appeared once more at the kitchen door, her bright face shining over her fragrant burden.

"I'm going now, Cousin 'Liza," she said. "I'll be sure to be back in time for dinner."

"You needn't hurry. It's going to be pretty warm to-day. It won't hurt if dinner is a little late for once."

"Oh, I'm so glad!" said Letitia; "not about the hurrying; but because I'll have more time for calls. I guess it's going to be a nice Decoration Day, Cousin 'Liza."

She nodded brightly, and then went happily down the road. Cousin 'Liza finished her work, and then went into the sitting-room, but stopped short at the table. There lay a piece of paper on which were fastened two tiny flags tied together with a bit of red ribbon and surrounded by a wreath of ivy leaves; under it was a note in careful childish writing:

"DEAR, DEAR COUSIN 'LIZA:—I give you this because it's Decoration Day, and because you lived in war time and know all about it, and because you've been so good—so good to me. I hope you'll like the flags and the wreath. I thought maybe they would last better than just flowers. I wish I could have made it look better, but somehow the leaves would twist a little crooked, but you won't mind it so very much, will you? Good-by, dear Cousin 'Liza, from Letitia."

The woman stood looking at the awkward little wreath. Then she covered her face with her hard, worn hands that had labored so faithfully, but so proudly and resentfully, through the hard years since the "war time." Because she could not give Letitia the best and finest, she was trying to keep her from everything—to make her proud and cold and bitter like herself; but now—she lifted the paper gently, almost reverently, and laid it in the upper drawer of the secretary; then she took it out again and pinned it to the wall.

"Letitia 'll like it better so," she said. "She wouldn't understand the other. And I guess I'll make some raisin cake, she allus did like that best of everything."

Letitia went down the road with her load of nodding lilac plumes. Once or twice she met some of the school girls who called out to her; but she did not mind—or at least not much. Was she not keeping her Decoration Day?

She went first to old Mrs. Price's. Mrs. Price was over seventy and was growing very feeble; but her eyes were still bright and her senses still sharp. She welcomed Letitia warmly. Letitia sat down and looked at her shyly; she had thought it would be easy, but found it hard to begin. Presently Mrs. Price helped her.

"Those are real pretty laylocks," she said.

"Yes'm," answered Letitia; "would you like some? I brought some for you if you would. You see it's Decoration Day, and they're going to decorate the graves of the soldiers; but Cousin 'Liza said she didn't think it was fair only to decorate the men when the women did so much too; so I bought you these, and then I'm going to four others."

Mrs. Price took the flowers in her old knotted hand. "If that isn't for all the world like you, Letitia Banks! You allus did have such queer notions.

RED IN THE BLOOD

is the sign of life, of vital force, of the force that life has, of the force that life is.

When the red is lacking, life is weak, the spirits are weak, the body is weak.

Scott's emulsion of cod-liver oil puts red in the blood and life in the body.

It's the food you can turn into muscle and bone and nerve. It gives you the mastery over your usual food—you want that. What is life worth if you've got to keep dosing yourself as an invalid?

Red in the blood! get red in the blood!

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

But I'm real obleeged for the laylocks, I'm sure.'"

Her eyes grew dim and seemed to be looking far away. Letitia stood still and waited. Finally she put her soft, warm hand over the old wrinkled one. "I guess I've got to go now," she said. "I'm going way up to Miss Anderson's, you know. Thank you so much for all the stories you've told me. I guess you're glad you were so brave, ain't you?"

The old woman caught the child's hand and held her back.

"Look here, Letitia Banks," she said. "I jest want to tell you one thing. People can be jest as brave right along every day as they were in war time. Now be sure you don't ever forget that."

"No'm, I won't," answered Letitia, seriously. "I guess that's the way my cousin 'Liza is, isn't she?"

The old woman dropped her hand and gave her a little push. "You'd better be going, child—it's getting hot," she said. She could not tell her that she and 'Liza Perkins had quarreled in those war times and never spoken since.

Letitia went on to Miss Nancy Anderson's and made a call there; but at the other places she left little notes with her flowers. It would have taken too long to stop at each place. As it was it was noon when she returned, warm and tired from her long walk. Cousin 'Liza was watching for her, and bathed her face and smoothed her hair before dinner.

"The wreath is real pretty," she said, awkwardly. "I pinned it on the wall."

"Did you like it?" asked Letitia, her weary little face all smiles. "Oh, Cousin 'Liza, I'm so glad!"

After dinner she began wiping the dishes, but Cousin 'Liza made her lie down; she had not thought that she was tired, but in a very few minutes she was fast asleep.

Several hours later she was awakened by the sound of voices. The room was cool and shady and full of fragrance from the lilacs outside the windows; and in the dim, sweet gloom Letitia saw Cousin 'Liza and old Mrs. Price, both with faces strangely moved.

"Why, Mrs. Price!" she exclaimed, sitting up in surprise.

The old woman turned. "I thought I'd come over—seein' it's Decoration Day, and I don't get out very often," she said. "Sam didn't happen to be using the horses. I brought you some preserved ginger, Letitia."

"Oh, thank you, Mrs. Price!" said Letitia. "I think your ginger just the nicest I ever tasted."

Mrs. Price peered through the lilac bushes. "Who's that coming up the road?" she asked.

Letitia left the lounge and ran and looked over her shoulder. "Why, it's Miss Nancy Anderson and Mrs. Briggs," she said, delightedly; and I do believe they're coming here! And —why, there are Miss Rice and Miss Phœbe Rice behind them!"

Cousin 'Liza rose in a flurry; it had been years since she had so many visitors, but Letitia was already at the gate welcoming them. She came back radiant with four old ladies behind her. "It's a real surprise party," she cried; "and I always wanted a surprise party!"

"Well, I guess you've got one now," said Cousin 'Liza. She was shaking hands with her guests; the unwontedness of company made her nervous, but the welcome in her face supplemented her awkward words. In a moment she beckoned Letitia aside.

"We might get supper while they're here," she said. "I guess there'll be enough. I baked a raisin cake this morning."

Letitia," called Miss Nancy, "wait a moment. I bought you some of my doughnuts. I had real good luck with them to-day."

"And I made some sugar cookies," said Mrs. Briggs. "I thought mebbe you'd like a few, Letitia."

"And we brought you some of our blackberry jell," chimed in the Misses Rice.

Then they all looked at each other and began to laugh, while Letitia, with a plate of cookies in one hand and a bag of doughnuts in the other, gazed in happy bewilderment at the jar of blackberry jelly.

"It don't just look like war times, does it?" said Mrs. Briggs. "I mind when we thougt cookies was a wonderful treat."

"And when we sent all our jell to the soldiers," added Miss Rice.

"Oh!" breathed Letitia, softly.

She ran in and out, helping Cousin 'Liza get the supper. The old ladies talked eagerly together; it was years since they had all met before.

Presently Letitia called them to supper. They filed out to the dining-room and seated themselves with little, fine company airs, as befitting the rare delight of the occasion. Letitia, at the head of the table, could scarcely eat at all. Once, through the open window, the sound of fresh, girlish voices floated in to her and she caught the flutter of white dresses; they were coming back from the "Decoration." Letitia looked around at her surprise party with shining eyes. "Oh, I'm so glad they weren't left out!" she thought.

Down by the river the quiet graves of the dead heroes were drifted deep with flowers. Outside Cousin 'Liza's window the lilacs nodded and swayed their shadows, like faint memories touching lightly the old faces of these unnoted patriots, who had given of their best and dearest in war time so long ago.—Mabel N. Thurston in the Independent.

Early Spring Cleaning Helps.

We hear less and less as the years go on of formidable house cleaning; but in the old times no one was thought to be an excellent manager who did not turn her whole establishment (family included) out of house at least once a year.

I am happy to live in the age when it is considered better to clean by degrees, and leave the family comfortable. There are really so many good housekeepers, and they keep their homes so sweet and tidy daily and weekly, that it does away with the necessity of a great upheaval in the spring and fall.

I wish to tell the housewives of a substitute for hard-wood floors. It is a charming substitute for carpets or matting in the summer, because it is so cool-looking and so easily kept. It is a stain used on the floor. You can do all the work at home. It is very inexpensive, and so nice for a dining-room or sitting-room or bedroom, in fact, for any room, because you can use rugs or strips of carpet with it, if you so desire. The first thing to do if there are any cracks between the boards is to go to work and fill them up with putty before the stain is applied. The stain is made of boiled linseed oil and burnt-umber; a tablespoonful of burnt-umber to a pint of oil; or a little less oil if you wish a lighter shade of brown. Apply with a paint brush, rubbing it in well. I sometimes put a second coat, and I have used the raw linseed oil with good results. One coat does very nicely. The preparation for the floor, which is very necessary, is to get it perfectly clean, so that the stain will adhere firmly and not peel off, and you do not wish a clouded appearance underneath. I wiped up my floors (or had them done) with soft, warm suds of rain water and pearline, and then rinsed with clear, warm water, and wiped it perfectly dry, after which I applied the stain. It dries very fast. Try a little stain first, on a piece of wood, to get the right color.

An oak stain is made of one pint of boiled linseed oil, one gill and a half of turpentine and three tablespoonfuls of whiting. Some prefer the oak stain if their woodwork is oak. You can wipe it up with an oiled piece of goods. This is a lovely floor.—Kentuckienne.

STRANGER—What place is that over there? Native—That's the new mansion of one of our sugar refiners. Stranger—Ah, another "house built upon the sand." Native—Say, rather, on the rocks that he made out of sand.

Forgotten.

A little year or so ago
She sparkled everywhere,
With shoulders bare and face aglow—
The fairest of the fair;
We read about her every day
As having been at this or that—
At club or tea or ball or play,
Attraction centered where she sat.

A little year or so ago
She swayed a certain set—
Without her function failed, but oh,
How quickly we forget.
The men who flocked around her then
Now flatter other girls, and they
That read her name with envy when
She swayed ne'er think of her to-day.

A preacher said some words, and lo,
A maiden ceased to be!
The fair one people used to know,
Oh, where, oh, where is she?
There's one who bends with loving gaze
O'er something small and frail and sweet—
I wonder if she mourns the days
When all the world was at her feet?

—Chicago Times-Herald.

On the Care of the Eyes.

On the treatment of the eyes, as on most topics, doctors often disagree. An oculist said yesterday to a patient: "Wear these glasses when reading for about a month, but no longer. If you find your eyes still troubling you, come back to me, but the chances are that they will be all right. People often injure their eyes by wearing spectacles long after they have performed their task. In such cases as yours, the only difficulty is a slight straining of the muscles by overwork, and a rest such as is afforded by the glasses, for a month generally, is sufficient to restore them to their normal condition.

"People who have no defect of vision seem to think that they never can have, and give their eyes all kinds of abuse. When reading, sewing or doing anything that requires continuous use of the eyes, one should close them at intervals, for a moment or two, then look off at a distance. This rests the muscles.

"The work or book should be held no nearer than is necessary for clear vision, and one should never attempt to read or work by twilight or dim light of any kind.

"The common practice of reading in cars is responsible for many visual troubles, as there is a constant strain on the directing muscles. The same is true of reading when lying down. It is a mistake also to read when sleepy, as the muscles of accommodation and convergence are relaxed and the effort to work causes congestion of the blood vessels of the eyeball.

"The cheap editions of popular books are extremely hurtful to the sight, as a rule. One should not read a type too small to be seen readily at eighteen inches distance."

It is said that blue eyes are structurally the weakest and brown the strongest, and students of lunacy state that in insane asylums there are more black and brown eyes than any other color.

Mental and temperamental traits also are said to be indicated by certain characteristics of the eyes. Clear blue color accompanies a cheerful disposition, and blue gray denotes a good deal of self-control, while green-gray eyes generally are indicative of a hasty temper. Small eyes are thought to be significant of cunning and deceit, and large eyes to indicate frankness and honesty. Large eyes that open widely signify a tendency to rashness, but when the upper lid covers half or more of the pupil, cool deliberation may be expected.

Eyes too close together are likely to mean deceit and poor judgment. The proper distance between them is the length of one eye. When the white of the eye shows beneath the pupil nobility of character may be assumed, and a tendency to insanity is probable when the whole of the iris is visible.—N. Y. Tribune.

Wigg—What about your scheme to organize an airship company? Wagg—It went up.

DOMESTIC ECONOMY.

Hints to Housekeepers.

If there are paint spots on the glass of the windows moisten them with turpentine before trying to remove, otherwise the glass will be scratched.

The white linen or pique skirt is a necessary article in the summer wardrobe, and the pure white shirtwaist is the correct thing to wear with it. It may be plain, tucked or embroidered, but it should be white and worn with a white belt and a white stock. White waists are also worn with the beige-colored linen skirts, and some of them have the embroidered ecru batiste collar.

In making pies which are to be filled after the crust is baked, line the tins with the paste, fill them with dry flour and cover with a paper. When they are done, turn out the flour. This will prevent the crust from shrinking and puffing up. The flour can be kept and used again for the same purpose. Some people use dried beans, rice, etc., for the purpose, but they are likely to sink into the crust.

For a cleaning fluid nothing is better than gasoline or naphtha. Either can be obtained in any village, and will be less trouble than a mixture that has to be packed. In using gasoline or naphtha apply it with a soft woolen cloth to the soiled spot, and rub lightly until it is dry. It is a good idea to follow up the application with a general light rubbing over the surrounding part of the garment. Then let it hang in the air until the odor has gone.

Rice blanc mange is a real delicacy. Boil half a pint of rice so that it is very soft, and press it through a sieve. Sweeten to taste and add half a cupful of chopped almonds which have been blanched. Stir in about half a teaspoonful of vanilla and two tablespoonfuls of milk. Mix well together and pour into molds while hot. Serve with a custard to pour over it, or better yet, some cream slightly sweetened and flavored with a few drops of vanilla.

Domestic Hints.

BREAD PUDDING.—To make bread pudding with oranges, take a pint of grated bread crumbs and soak them in one and one-half pints of milk; add one well beaten egg, one-quarter of a cup of sugar, and butter size of a walnut; pour about two-thirds of the mixture into a buttered pudding dish, and on top lay a cupful of sliced oranges. Add the rest of the pudding and bake in a moderate oven.

CURRIED FISH (CHAFING DISH).—Cook one tablespoonful of onion, cut very fine, in one tablespoonful of butter five minutes. Be careful not to burn. Mix one tablespoonful of curry powder with one tablespoonful of flour and stir into the melted butter. Add gradually, half a pint of milk or cream, stirring constantly. Then add a large cupful of any kind of cold boiled fish; let it simmer a few minutes and serve very hot.

FRICASSEED EGGS.—Put two tablespoonfuls of butter in the chafing dish; when melted, add a tablespoonful of flour, stirring constantly, a sprig of parsley cut fine, five or six minced mushrooms, half a pint of white stock, veal or chicken, or the same quantity of cream, in which a dessert-spoonful of fluid beef has been dissolved. Simmer about five minutes, and add six hard-boiled eggs cut in thick slices; boil up once, and serve hot.

FRUIT CUSTARD.—A delicious fruit custard may be made by boiling one quart of milk in a double boiler. Beat two eggs very light and stir into them four tablespoonfuls of sugar and one tablespoonful of flour. Add to this a little cold milk, then stir it gradually into the boiling milk, stirring until it thickens, set it away to cool. When cool, flavor with vanilla. Have ready in sauce dishes strawberries or sliced oranges or any fruit in season, and pour the custard over it. This is a very simple and palatable dessert.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 5, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	July.	Sept.
Wednesday	74⅛@73⅝	—@—
Thursday	*—@—	—@—
Friday	74 @74⅞	—@—
Saturday	74⅝@75⅛	72⅝@73⅛
Monday	74¾@78⅛	72⅝@74⅛
Tuesday	79¾@75⅝	74¼@71⅛

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday	5s 11⅜d	5s 10¾d
Thursday	5s 11⅜d	5s 10¾d
Friday	5s 11⅜d	5s 10¾d
Saturday	5s 11⅜d	5s 11⅛d
Monday	5s 11⅝d	5s 11¼d
Tuesday	6s 0¼d	5s 11⅛d

*Holiday.

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec.	May.
Thursday	*——@——	——@——
Friday	1 04⅛@1 04¾	——@——
Saturday	1 05¼@1 04⅞	——@——
Monday	1 04⅜@1 05	——@——
Tuesday	1 03¾@——	——@——
Wednesday	1 03⅝@1 03¼	——@——

*Holiday.

WHEAT.

There has been some firmness developed in the wheat market the past week in Eastern and foreign centers, based on continued unfavorable crop weather in a large area of the wheat growing sections of the United States east of the mountains and to reported damage in same quarter by Hessian fly. In the local market, beyond a moderate advance in Call Board prices for December wheat, there was no appreciable improvement. Trading in actual wheat in this center continues of light proportions, either for shipment or on local account. Exporters have few ships and most of them have all the wheat they require for the time being. New crop will be arriving in wholesale quantity in a few weeks, and as is almost invariably the case at the beginning of the season, there will be considerable pressure to realize on the part of growers in need of money. Under existing conditions, the prospects for the development of any special firmness in the near future are not encouraging. Prices are now so low that there is little or no inducement for those who are carrying grain to make efforts to realize. The United States visible supply east of the Rocky mountains is stated to be 36,394,000 bushels, indicating a decrease the past week of 3,670,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1901, delivery, 98@—c.

December, 1901, delivery, $1.02⅞@1.03¾.

Wednesday, at regular noon session of Call Board, December, 1901, wheat sold at $1.03⅝@1.03¼; May, 1902, $—@—.

California Milling	$1 00 @1 05
Cal. No. 1 shipping, alongside	97½@1 00
Oregon Valley	1 00 @1 02½
Washington Blue Stem	1 00 @1 05
Washington Club	98¾@1 02½
Off qualities wheat	95 @ 97½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s0½d@6s1d	6s2d@6s2½d
Freight rates	38¾@40s	37@38s
Local market	$0 90@93¾	$0 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on June 1st and May 1st:

Tons—	June 1st.	May 1st.
Wheat	*88,213	104,697
Barley	†13,546	18,999
Oats	1,458	2,668
Corn	58	114

*Including 67,939 tons at Port Costa, 19,463 tons at Stockton.

†Including 8739 tons at Port Costa, 3042 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 16,483 tons for the month of May. A year ago there were 139,933 tons wheat in Call Board warehouses.

FLOUR.

The market is without special change, quotable values remaining as last stated. There is a fair export movement, mainly special brands contracted for ahead. Trade on local account is lighter than ordinarily, largely the result of pending labor strikes. Supplies are of fair proportions.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

There is no improvement to note in the general condition of the market, values continuing on a low plane, with the demand slow, buyers holding off as much as possible, in anticipation of increased offerings in the near future. Small quantities of new crop barley have already arrived, but it is not probable that new will come forward very freely for at least several weeks to come. Prices obtainable are certainly not of the sort to prove tempting to producers or to cause them to be in a hurry to realize. There will, however, likely be more than enough crowded on the market during the next month or two to keep the situation unfavorable to the selling and producing interests. Stocks in Call Board warehouse are given at 13,456 tons, as against 40,868 tons a year ago.

Feed, No. 1 to choice	75 @ 76¼
Feed, fair to good	73¾@ 75
Brewing, No. 1 to choice	82½@ 85
Chevalier, No. 1 to choice	—@—
Chevalier, No. 2	—@—
Chevalier, poor	—@—

OATS.

Market is very lightly stocked and will continue so until new crop begins to arrive. Business is necessarily restricted to small jobbing operations, leaving wholesale values for the time being largely nominal. Current quotations are based mainly on asking rates. Under selling pressure these figures could not be realized.

White Oats, fancy feed	1 45 @1 50
White, good to choice	1 35 @1 42½
White, poor to fair	1 25 @1 32½
Gray, common to choice	1 30 @1 42½
Milling	1 42½@1 50
Surprise, good to choice	1 45 @1 52½
Black Russian	1 12½@1 30
Red	1 30 @1 45

CORN.

Offerings are of light volume and are principally Eastern product. Values for large corn are inclining slightly in favor of buyers, but are still at a high range. Domestic small yellow continues to be very firmly held.

Large White, good to choice	1 32½@1 37½
Large Yellow	1 32½@1 37½
Small Yellow	1 55 @1 60
Eastern, in bulk (carload lots)	1 22½@——

RYE.

Demand is insignificant. Market is weak, with wholesale values poorly defined.

Good to choice, new	80 @ 82½

BUCKWHEAT.

Nothing of consequence doing. Quotable values remain nominally as previously noted.

Good to choice	1 85 @2 00

BEANS.

The market is necessarily quiet, owing to very limited stocks of most varieties. Such as are scarcest, the white descriptions, are most inquired for. Purchasing on Government account has had much to do with sustaining prices on white beans, stocks of which have been at no time heavy during the past season, and have been lately exceedingly light. It will be several months before new beans will be on market, giving ample opportunity to clean up existing supplies, even at such comparatively stiff figures as have been lately current. Pinks and Bayos are in fair supply and market for these is rather easy in tone, with very limited movement. Horse beans are receiving very little attention, and market for this description is weak.

Pea, fair to good, 100 lbs	4 75 @5 00
Small White, good to choice	4 75 @4 90
Lady Washington	4 00 @4 15
Butter	5 00 @6 00
Pinks	1 40 @1 65
Bayos, good to choice	2 25 @2 50
Reds	3 00 @3 25
Red Kidney	4 25 @4 50
Limas, good to choice	6 25 @6 40
Black-eye Beans	2 75 @3 00
Horse Beans	1 00 @1 25
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

Scarcely anything doing in a wholesale way in Dried Peas of either variety. Quotations are unchanged, but values are largely nominal.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

Most of the wool now offering in this center has to depend upon scourers for an outlet, being unfit for shipment in the grease. Taking this into consideration, there is about as much doing as could be reasonably expected, with values fairly steady at previously quoted range. The bright and free spring wools of this season's clip, other than Humboldt and Mendocino fleeces which are yet to come forward, are practically closed out.

SPRING.

Humboldt and Mendocino	15 @16
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	15 @16
Oregon Valley, coarse to medium	14 @15
Eastern Oregon, choice	12 @14
Eastern Oregon, fair to good	9 @11
Nevada, as to condition	10 @12

FALL.

Humboldt and Mendocino	11 @12
Middle County	8 @ 9
San Joaquin	7 @ 8

HOPS.

Market remains lifeless, with no old worth mentioning now in stock. In the way of contracting for new to arrive, there is very little doing, so far as reported. Dealers name 10@12c. for choice now, but are not securing any noteworthy quantities on contracts.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

Not much new hay arriving, and most of that coming forward shows damage from rain. Damaged hay is selling mainly within range of $5@7.50 per ton. Some fairly good new Wheat hay has sold at $9 per ton. Values for good to choice new are likely to rule closely to figures now current on old hay.

NEW CROP.

Wheat, good to choice	8 50@10 00
Wheat and Oat	8 00@ 9 50
Oat	7 00@ 8 00
Oat, stained	4 50@ 7 00
Barley and Oat	6 50@ 8 00

OLD CROP.

Wheat	8 00@13 00
Wheat and Oat	8 00@12 00
Oat	7 00@10 50
Barley	6 00@ 8 00
Volunteer	5 00@ 8 00
Alfalfa	7 00@ 9 00
Stock	5 00@ 7 00
Compressed	8 00@12 00
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

Stocks of Bran are of much the same light proportions as for several weeks past and are mostly Northern product. Supplies of Bran in city warehouses on 1st inst. were reported at 132 tons. Middlings and Shorts were not offered in heavy quantity, neither was there any active demand for them. Rolled Barley market presented an easy tone. Tendency on Milled Corn was to lower figures.

Bran, ₱ ton	17 00@18 00
Middlings	17 50@20 00
Shorts, Oregon	17 00@18 00
Barley, Rolled	17 50@18 00
Cornmeal	28 00@——
Cracked Corn	29 00@——

SEEDS.

Stocks of all descriptions quoted herewith are of too light volume to admit of any noteworthy trading, and that there will be much change in this regard for a month or more is not probable. Values for the present are largely nominal, quotations remaining without change.

	Per ctl.
Mustard, Trieste	—@—
Mustard, Yellow	—@—
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

The Grain Bag market has continued on much the same lines as last noted, with very fair demand and holders as a rule insisting on full current figures. It does not now look as though prices would go materially higher, although there is no certainty on this score. Should there be a temporary scarcity, values would be likely pushed further upward. That there will not be enough bags to go around is wholly improbable, but it may not be possible to promptly fill all orders.

Calcutta Grain Bags, buyer June-July	7½@ 7⅝
Calcutta Grain Bags, spot	7½@ 7⅝
San Francisco Grain Bags, 22x36, spot	7½@—
State Prison Bags in lots of 2000, ₱ 100	—@—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4¾@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

Current values on Hides and Pelts are being fairly well maintained. Tallow continues in fair request at unchanged rates.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	10 @—	8½@—
Medium Steers, 48 to 56 lbs	9 @—	7½@—
Light Steers, under 48 lbs	8 @ 8½	7 @—
Heavy Cow Hides, over 50 lbs	8½@ 9	7 @7½
Light Cow Hides, under 50 lbs	8 @ 8½	7 @—
Wet Salted Kip	9 @—	8 @—
Wet Salted Veal	9 @—	8 @—
Wet Salted Calf	10 @—	9 @—
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	75	@1 00
Pelts, medium, ₱ skin	50	@ 75
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3½	@ 3¾
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Dealers are very bearish in their ideas, but are not securing much honey at the prices they name. In a small way to special trade an advance on quotations is being realized.

Extracted, White Liquid	5 @ 6
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
White Comb, 1 lb frames	11½@12½
Amber Comb	9 @10
Dark Comb	6 @ 8

BEESWAX.

Spot supplies are of much the same very limited volume as they have been during the greater part of the season. The little business doing is at generally unchanged values.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

Market for beef shows a little more ease the past week, with no noteworthy excess of offerings, but the demand could not be termed brisk. Mutton was in fair request, with supplies sufficient for immediate needs and prices practically unchanged. Veal arrived in light quantity and values were well sustained. Lamb brought much the same figures as preceding week. Hog market was not noteworthy for firmness, but in quotable rates there were no special changes to record.

Beef, first quality, dressed, net ₱ lb	7 @ 7½
Beef, second quality	6½@ 7
Beef, third quality	6½@—
Mutton—ewes, 6½@7½c; wethers	7 @ 8
Hogs, hard grain fed, medium	6 @ 6½
Hogs, small, fat	6 @ 6½
Hogs, large, hard	5⅝@ 5¾
Hogs, feeders	—@—
Hogs, country dressed	7½@ 7¾
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	8½@—

POULTRY.

Considerable stock was carried over from previous week and about six carloads of Eastern arrived, causing the market for most descriptions to incline against sellers. Prices throughout averaged lower than preceding week, and it was especially difficult to dispose of ordinary old stock to advantage. Large and fat young chickens and small broilers in fine condition sold to best advantage.

Turkeys, live hens, ₱ lb	12 @ 13
Turkeys, live gobblers, ₱ lb	9 @ 10
Hens, California, ₱ dozen	3 50 @4 00
Roosters, old	3 50 @4 00
Roosters, young (full-grown)	7 00 @8 00
Fryers	4 50 @5 00
Broilers, large	3 50 @4 00
Broilers, small	2 25 @2 50
Ducks, old, ₱ dozen	3 50 @4 00
Ducks, young, ₱ dozen	4 00 @5 00
Geese, ₱ pair	1 00 @1 25
Goslings, ₱ pair	1 25 @1 50
Pigeons, old, ₱ dozen	1 50 @——
Pigeons, young	1 50 @——

BUTTER.

Market is firmer for choice to select fresh, both creamery and dairy product, with latest sales at an advance of about half a cent per lb. over previous rates. Medium and defective qualities continue to be offered at much the same easy figures as had been ruling.

Creamery, extras, ₱ lb	18 @18½
Creamery, firsts	17 @17½
Creamery, seconds	— @—
Dairy, select	17 @17½
Dairy, firsts	16½@17
Dairy, seconds	14 @15
Dairy, soft and weedy	— @—
Mixed store	12½@13½
Creamery in tubs	17 @19

Pickled Roll	—	@—
Firkin, California, choice to select	16	@17
Firkin, common to fair	14	@15

CHEESE.

Domestic flats are in more than ample supply for immediate needs and market lacks firmness. Stocks of small cheese are rather light, as is also the demand at existing values. Eastern cheese is in light stock. Some new Eastern is on the way here and about due.

California, fancy flat, new	8	@—
California, good to choice	8½	@—
California, fair to good	—	@ 7½
California Cheddar	—	@—
California, "Young Americas"	9½	@10

EGGS.

Arrivals are on the decrease, and the proportion of choice to select is lighter than it has been for some time past. A still greater falling off in receipts and in the average quality of offerings is looked for in the near future. Better prices are being realized for best qualities, with market firm at the improved figures. Values for the more ordinary grades are without appreciable improvement.

California, select, large, white and fresh.	16	@—
California, select, irregular color & size.	14	@15½
California, good to choice store	12½	@13½

VEGETABLES.

While most kinds were in fair supply, it was the exception where best qualities were in excessive stock or failed to meet with prompt custom at full current rates. Peas and String Beans were favored with a moderately firm market. Asparagus of high grade brought as a rule good prices. Summer Squash and Tomatoes were in increased receipt and lower. Onion market was liberally stocked with new Red, which were in the main of good quality. New Yellow Onions are beginning to arrive, but hardly in sufficient quantity to quote and are not ripe enough to be desirable.

Asparagus, ℔ box	1 00	@2 00
Beans, String, ℔ lb	4	@ 4½
Beans, Wax, ℔ lb	4½	@ 5
Cabbage, choice garden, ℔ 100 lbs	60	@ 70
Cauliflower, ℔ dozen	50	@ —
Corn, Green, ℔ doz	10	@ 25
Cucumbers, ℔ box	1 00	@1 50
Egg Plant, ℔ lb	7½	@ 12½
Garlic, ℔ lb	4	@ 6
Onions, Yellow Danver, ℔ cental	3 50	@4 00
Onions, Australian, ℔ cental	4 00	@4 50
Onions, New Cal. Red, ℔ cental	40	@ 65
Peas, Sweet garden, ℔ lb	2	@ 2½
Peas, good to choice, ℔ sack	75	@1 25
Peppers, Green Chile, ℔ lb	10	@ 12½
Rhubarb, ℔ box	35	@ 50
Rhubarb, Mammoth, ℔ box	60	@ 75
Squash Summer, ℔ small box	50	@ 75
Tomatoes, ℔ box	65	@1 00

POTATOES.

New potatoes have not been arriving in heavy quantity, and market most of the week has inclined in favor of sellers. New from Sacramento river section are coming in boxes. Some new Garnet Chile are being received in sacks from Mission San Jose. Market for old potatoes is quite steady for desirable qualities, with offerings light and mostly under choice.

Burbanks, River, ℔ cental	—	@—
Burbanks, Petaluma-Tomales, ℔ ctl.	1 00	@1 30
Burbanks, Oregon, lb cental	1 00	@1 65
New Potatoes, ℔ cental	1 50	@2 00

The Fruit Market.

FRESH FRUITS.

Considering the time of year, and in comparison with former seasons, arrivals of fresh fruit are by no means heavy. Red Astrachan Apples are beginning to arrive and are selling to fair advantage. Of common Green Apples there are more than enough for the demand. Apricots of the Pringle variety are mostly out and Royal are taking their place. Peaches are arriving more freely, but are still in the main unripe. Early Pears and Plums are in moderate receipt and are showing very fair average quality. Cherries sold at a wide range, with market decidedly firm for choice to select, but weak for defective stock. Strawberries brought as a rule very good figures. Most other berries in season averaged somewhat lower than preceding week. Black Figs from Yuma were offered at $2.50 per box, and Watermelons from Indio at 75c. apiece.

Apples, Red Astrachan, ℔ 50-lb. box.	75@	1 00
Apples, green, ℔ small box	35@	50
Apricots, Royal, ℔ box	65@	1 00
Blackberries, ℔ small crate	1 00@	1 15
Cherries, Black, ℔ box	60@	85
Cherries, Royal Anne, ℔ box	75@	1 00
Cherries, Royal Anne, ℔ lb	6@	8
Cherries, Black, ℔ lb	5@	8
Cherries, White, ℔ box	30@	60
Cherries, common White and Red, ℔ lb	3½@	5
Currants, ℔ chest	3 50@	5 00
Gooseberries, common, ℔ lb	2½@	3½
Logan Berries, ℔ chest	5 00@	9 00
Peaches, ℔ box	50@	75
Pears, Madeline, ℔ small box	30@	60
Plums, Cherry, ℔ drawer	25@	40
Plums, Clyman, ℔ box	30@	60
Raspberries, ℔ chest	8 00@	9 00
Strawberries, Longworth, ℔ chest	7 00@	10 00
Strawberries, Large, ℔ chest	4 00@	6 00
Strawberries, Lorin, ℔ crate	1 00@	1 25

DRIED FRUITS.

There is very little doing in the dried fruit trade. Holders are anxious to effect a clean-up, now that the new season is near at hand, and on most offerings would not hesitate to grant concessions to buyers, if by so doing transfers of consequence could be effected. Quotations show little change, but are largely nominal, owing to the prevailing inactivity. Evaporated Apples are a shade easier, on account of lighter inquiry. There are no heavy holdings of this fruit, but there is no desire to carry, coin being at present preferable to the goods, even if moderate sacrifices have to be made to obtain the coin. Where buyers are found, not alone for Apples, but for last year's dried fruit of any description, they purchase, as a rule, only to cover most immediate needs, naturally having no desire to stock up at the tail end of the season. There are fair quantities of Peaches and Plums still in store, mostly of the more common grades. Pears are tolerably well cleaned up, as are also Figs. The Prune market is quiet, the same low prices lately prevailing continuing current. In the way of contracting for new Apricots very little has been done, growers and buyers being decidedly apart in their views. For new Royals in sacks, Northern, the market may be said to be quotable at 8@9c. for early deliveries of good to choice in carload lots.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6	@ 6½
Apricots, Royal, choice, in sacks, ℔ lb	7	@ 7½
Apricots, Royal, fancy	—	@—
Apricots, Moorpark	9	@10
Apples, in 50-lb boxes, rings, pressed, fancy	5½	@ 6
Apples, 50-lb boxes, rings, pressed, good to choice	3	@ 4
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5½	@ 6
Peaches, unpeeled, choice	4	@ 4½
Peaches, peeled, in boxes	11	@14
Pears, unpeeled Bartletts, halved, fancy.	5	@ 6
Pears, halved, unpeeled Bartletts	3	@ 4
Pears, quartered, unpeeled Bartletts	3	@ 4
Plums, Black, pitted	3½	@ 4½
Plums, White and Red	4½	@ 5½
Prunes, Silver	4½	@ 6

COMMON SUN-DRIED.

Apricots	4	@ 5
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	2	@ 3
Figs, White	2½	@ 3½
Peaches, unpeeled	2	@ 3
Pears, prime halves	1½	@ 2½

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

As is to be expected at this season of the year, the raisin market is showing very little life. The business doing is principally in seeded goods at the special rates lately current on the same, or in sugared raisins at cut figures. Stocks offering under conditions above specified are understood to be now down to small proportions. Official card rates of Growers' Association continue as before noted.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—
(Usual advance for fractions.)		
Loose Muscatel, 4-crown standard, ℔ lb	—	@ 7
Loose Muscatel, 3-crown	—	@ 6½
Loose Muscatel, 2-crown standard	—	@ 6
Loose Muscatel, seedless	—	@ 6½
(Above prices for loose raisins are for 50-lb boxes.)		
Seeded Raisins, 1-lb packages, ℔ lb	5¼	@—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached. 7@8c.

CITRUS FRUITS.

Oranges are in reduced stock, but of common there are too many. Choice to select are commanding, in a jobbing way, a small advance on recent rates. Lemons are in fair request and market for best qualities is moderately firm, jobbing rates averaging a little higher than for some time past. Limes are steady.

Oranges—Navel, ℔ box	1 25@	2 75
Seedlings, ℔ box	75@	1 50
Valencias, ℔ box	1 50@	2 75
St. Michaels	1 25@	2 00
Grape Fruit, ℔ box	—	@—
Lemons—California, select, ℔ box	2 25@	2 50
California, good to choice	1 75@	2 00
California, common to fair	1 00@	1 50
Limes—Mexican, ℔ box	4 00@	4 50

NUTS.

Almonds are quiet at quotably unchanged values. Walnuts are out of stock. Peanuts are in fair supply and are offering at unchanged figures.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@14
California Almonds, soft shell	10	@12
California Almonds, hard shell	6	@ 7
Peanuts, California, fair to prime	4½	@ 5½
Peanuts, Eastern, hand-picked	5½	@ 6
Pine Nuts	5	@ 6

WINE.

In the way of transfers from first hands there is practically nothing doing, owing to absence of offerings. The market presents the same firmness as previously noted, and nothing to warrant anticipating the development of any weakness later on, especially with the prospective price of grapes next Fall $25@30 per ton. Quotable values for dry wines of the vintage of 1900 are nominally 22@25c. per gallon. The steamship Leelanaw, sailing Monday for New York, carried 134,075 gallons and 9 cases wine.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	146,217	6,158,903	5,999,476
Wheat, centals	135,740	7,672,214	6,502,538
Barley, centals	104,893	3,631 690	4,960,283
Oats, centals	680	603,280	769,019
Corn, centals	660	105,230	139,931
Rye, centals	850	114,630	99,522
Beans, sacks	3,537	544,751	362,290
Potatoes, sacks	13,768	1,464,637	1,187,156
Onions, sacks	3,969	175,562	162,258
Hay, tons	1,981	153,430	147,1 2
Wool, bales	1,433	53,122	54,207
Hops, bales	...	8,234	10,432

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	119,492	3,646,236	4,051,066
Wheat, centals	123,321	7,296,151	5,685,605
Barley, centals	55,888	2,010,829	3,868,128
Oats, centals	...	49,101	45,123
Corn, centals	...	3,538	19,793
Beans, sacks	117	13,627	26,148
Hay, bales	...	86,169	135,951
Wool, pounds	...	1,044,291	4,324,433
Hops, pounds	...	561,796	1,067,007
Honey, cases	314	2,175	3,581
Potatoes, pack's	133	130,059	72,155

California Dried Fruit at New York.

NEW YORK, June 5.—Evaporated apples, common, 3@4c; prime wire tray, 4½@5c; choice, 5@5¾c; fancy, 6@6½c.

California Dried Fruits.—Inactive but fairly steady. Quotable values remain nominally as last noted.

Prunes, 3¼@7c.

Apricots, Royal, 7½@12c; Moorpark, 8½@14c.

Peaches, unpeeled, 5@10c; peeled, 12½@20c.

Trade Mark.

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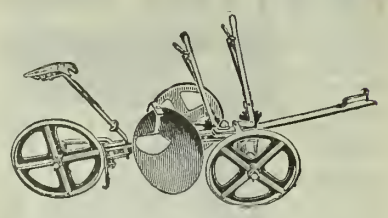
918 F St., Washington, D. C.

Rotary Disc Plows.



All the plow manufacturers have been making experiments of this style of plow, and this is evidence that they see sufficient merit in the principle of the disc plow to try to determine if they can make the plow so that it will do good work under all conditions. The Benicia Agricultural Works of Benicia, Cal., evidently have struck upon the right model, for they have placed orders to put up over 1000 of these plows for next season. From all accounts, it will be a surprise to other disc plow manufacturers, and many applications for agencies are already being made to the selling agents, Baker & Hamilton, San Francisco, Sacramento, Los Angeles. *

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This paper has a heavy rope manilla base, and is thoroughly saturated with P & B Compound, which makes it fire, water, germ, acid and fume proof. It is splendid for use in building houses and boxes for sulphuring fruits. To construct a portable house, simply nail the paper on a wooden framework and cement laps with P & B Paint. This makes an air-tight, sulphur-proof box, easily portable.

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whether they have spavins, ringbones splints, curbs, or other forms of bony enlargement, use

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Every lot is tested and found reliable before a single dose is put on the market.

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Bacteriological Dept., FRESNO, CAL.

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F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

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in your neighborhood need wells for home supply or live stock purposes? Just take the time to count them, then figure up the money you could make in drilling those wells.

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THE VETERINARIAN.

Remedy for Lung Worms.

To the Editor:—The discussion of lung worms in the Pacific Rural Press of May 25 reminds me that some years ago I had a fine lot of lambs attacked by a mysterious malady. They were of Shropshire and Shropshire-Merino crossbred stock, and were running on rather low land in Sonoma county, Cal. The animals attacked coughed severely, and there was a frothy discharge from the nostrils, which was sometimes streaked with blood. They began to die at an alarming rate. On examining the lungs of one that had just died they were found to be badly inflamed and in the air passages were many hair-like white worms, evidently a species of strongylus.

Knowing that a bit of gum camphor the size of a pea would cure a chicken of "the gapes," which is also caused by a strongylus, it was surmised that a suitable dose of the same medicine might benefit the lambs.

A supply of gum camphor was procured, coarsely pulverized, and mixed with an equal amount of salt. The lambs were driven into the barn and hustled about until the afflicted ones began to cough. These were caught and each one given a spoonful of the camphor and salt mixture, the mouth being held open and the medicine put on the back part of the tongue. Each lamb so treated was marked on the top of the head with tar. Two or three days later the flock was put through the same treatment, but very few, if any, of the tarred lambs coughed that time, showing a quick action of the remedy. Then orders were given to dose the whole flock, as it was not much more trouble than to pick out the afflicted ones, and prevention is certainly worth as much as cure in such a case.

After adopting this remedy but one lamb died of the lung worms, and that was a weakling to begin with. Three or four doses at intervals of two or three days seemed to be all that was needed.

The quick action and efficiency of the remedy was surprising, and led to the conclusion that camphor is a specific for lung worms in domestic animals. If this were generally known, and the symptoms of the parasites generally understood, there need be no serious losses from lung worms.

Moderate doses of turpentine, mixed with salt, might be quite as good as the camphor, as it also cures "gapes" in chickens. The easy and efficient way to apply either remedy seems to be through the digestive system, and not by inhalation. As the lung worm did not again make itself troublesome on that farm while it was used by the writer during a period of several years, it appears that the recurrence of the pest in a given place is very uncertain, and depends upon conditions which are not yet fully recognized. Will the cattle growers try the above treatment on their calves and report results for the common good? C. H. Dwinelle.

Fulton, Cal., May 29, 1901.

Answers by Dr. Creely.

HOG CHOLERA.

To the Editor:—Hogs are dying in this neighborhood with a disease that no one seems able to name. The hair stands on end, they matter at the eyes, do not go out to feed, lie around a few days, get poor and die. Those are the general symptoms. Some say they get stiff in the legs or feet and can't, or at least won't, stand or walk around at all. Others say they swell up under the belly, pretty well back. Can you name the disease and give a remedy or preventive? I mix wood ashes with salt and keep it where my hogs can get at it at all times. Since this disease has got into the neighborhood I have been mixing a little copperas and charcoal with the feed. Some say feed sulphur, too. How much sulphur and how much copperas should be given at a dose to pigs two months old, and how much to shoats of 100 pounds? Can you give me a preventive for mange on small pigs?—Subscriber, Cottonwood, Cal.

For hog cholera or swine plague, the proper treatment would be to inoculate against it. I would advise the Twining hog cholera serum. Copperas and charcoal are good where the intestinal symptoms are the most severe. Sulphur has no great therapeutic value. One-half drachm of copperas is a fair dose for 100-pound shoats. The mange treatment is to give a good purgative, avoid heating foods, and give Fowler's solution of arsenic internally each day. External treatment would be the following: Creoline, 4 ounces; olive oil, 12 ounces; oil eucalyptus, 1 drachm. Mix and apply daily after washing with hot water and tar soap.

TREATMENT FOR WARTS.

To the Editor:—I have a yearling heifer that has a large wart—or a series of warts—on the top of her neck, just in front of the shoulder blades. They have been growing for three or four months. The main one is 6 or 8 inches across and 2 inches thick in the middle, with a crack through it that bleeds some. Then, there are other small warts scattered around it by the dozen. I have applied kerosene oil to it several times, but it does no good, and the wart grows right along. What shall I do for it?—J. W. Steele, Merced county.

Cut them entirely off and once daily thereafter apply silver caustic.

Dr. E. J. Creely.

510 Golden Gate Ave., S. F.

Sore Shoulders

sore neck, sore back, &c., resulting from collar, saddle or harness galt and chafing, and all forms of canker, callous, &c., are instantly relived and cured with

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Cures also **curb, splint, contracted cord,** all forms of lameness and **colic,** distemper, founder, pneumonia, &c.

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Bet. California and Pine, SAN FRANCISCO, CAL.

THE APIARY.

Bleaching Comb Honey in California.

D. A. Higgins of Bonsall writes to Gleanings in Bee Culture as follows:

I make a house expressly for bleaching the honey. I first build a floor upon legs, each leg having a tin can at the bottom and a tin plate at the top. These legs are placed between two plates of redwood, 2x4 inches and 14 feet long. At every 2 feet I have a sleeper so as to make the floor strong. These sleepers are placed on these plates so that the legs are under their ends. I have no underpinning under the center of the house. This is to keep out all mice or ants, which are very troublesome in this country, and they are especially troublesome in comb honey. The little tins at the bottom of the legs are filled with crude oil to keep out the ants, and the tin plate at the top keeps out the mice.

This house is covered with cloth, the top being heavy goods. Now we have the bleaching house complete. On a platform in front of this house I build my sulphur box, 2 feet wide and 6 feet long. I next take one joint of stove-pipe and cut a hole in one end of a square sixty-pound tin can large enough for the pipe. One end of this pipe I insert in the can and an elbow on the other end, communicating with the sulphur box. I now cover the pipe with earth about 6 inches deep. I next cut a hole in the side of the can, to put in sulphur. Take a large teacup of sulphur and place it in the can, and we then are ready to sulphur the honey.

The Method of Bleaching.—I take my supers from the hive, place them on a wheelbarrow and wheel them to the sulphur box; place them in the box until I have thirty supers, then I light the sulphur and let it stand for about three hours. I next wheel them to the bleaching house and place on the work tables, which I have on both sides of my house and reaching its full length. I now remove the honey from the supers and place it on shelves, which run around the house. I leave them there about twenty-four hours, and then reverse the section and leave about twenty-four hours longer. I find that where the honey is badly stained it will now be very white.

It is necessary to have a good quality of sulphur, as it does not injure the honey, and the honey will bleach much nicer. It is the light which bleaches, so the cloth must be thin. The sulphur box should be outside of the house, for it would be impossible to work in the house while sulphuring if the box were inside. This bleaching house is very convenient if one does not sulphur his honey, for the reason that one can store on shelves of a house 12x14 feet about 100 cases of comb honey, giving plenty of time to clean and pack it.

Comments.—The editor of Gleanings adds: There are some who are inclined to believe that there is not much in this bleaching business. Very recently we received a letter from one of the extensive and prominent bee keepers in the East, stating that he was making bleaching a success. Comb honey producers had better wake up to the fact that a great deal of their off-colored comb honey can be made a No. 1 by the proper use of sulphur and sunlight.

Text Book on Plant Diseases.

The above is the title of a work by George Massee of the Royal Herbarium, Kew, which will be found very valuable for reference by those directly occupied in the cultivation of plants, in the determination of the nature of diseases caused by parasites of vegetable origin and in the use of remedies therefor. It gives descriptions of the various kinds of fungi chiefly encountered by the horticulturist, and if the observer is used to careful reading and close looking he can hardly fail to derive information which will enable him to determine the nature of his trouble and to proceed at once to the best known treatment. The book is a handsomely printed and illustrated work of 458 pages, published by McMillan & Co., and sold at $1.60—at which price it can be ordered through the Pacific Rural Press.

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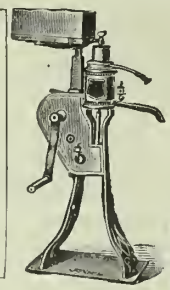

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Every horticulturist should have my 28-page illustrated catalogue which tells all about citrus trees, the old sorts and the tested new sorts; also table for planting trees, sowing seed, etc. Your address on a postal card will bring you one. Address
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PAT. SEPT. 19, 1899.

Does the work for fifteen Sulphur Houses. Saves half the expense of handling your fruit. Our 1901 pattern is made EXTRA STRONG.
EASY. SIMPLE. QUICK. PERFECT SATISFACTION GUARANTEED.
PRICE $25.00 F. O. B.
DUNN BROS., DINUBA, TULARE COUNTY, CAL.

ENTOMOLOGICAL.

Sulphur Wash for Red Spider.

Interest in red spider killing, or, more properly, mite killing (for it is not a matter of color), is rife again, and any one who has any plant infested with these minute but grievous pests should strike at them early, hard and continuously. It is not hard to kill the mite if you succeed in hitting him with an insecticide, and there is every encouragement for earnest work. Sulphur or sulphur preparations lead in effectiveness. Mr. Geo. P. Hall, Horticultural Commissioner of San Diego, tells of a mite medicine which is found very good in his district. F. A. B. asked him to give precise instructions regarding the making of the sulphur and caustic soda wash to kill the mites and spider, saying that he boils 2 gallons of water and adds 2½ pounds of lye, then mixes 3 pounds of sulphur to a paste and adds it to the above. Mr. Hall replies:

The usual way is to complete the entire process without any fire. First mix the sulphur to a paste with cold water, then add the lye dry; chemical action immediately takes place and the heat so generated completely cooks the sulphur without the aid of any fire. You, of course, add the water slowly to prevent concentration of the sulphur. The proportions are 10 pounds of caustic soda or lye, 15 pounds of sulphur and 20 gallons of water. This forms your stock solution, of which you use 1 gallon—or more if you wish to make it stronger—in 40 gallons of water, which is the spray now ready to use on the trees. The object of the heat is to produce the sulphur so that it will emulsify with the water. If you use fire to reduce the sulphur, only take enough water to boil the sulphur to a liquid state, then add the lye and the rest of the water without further boiling; but the whole process can just as well be done without fire. The destruction of the mite is complete with this preparation, for while the insect works swiftly, there are none that are more easily disposed of with sulphur preparations.

Insect Enemies of Growing Wheat.

There are many insects which feed on and injure growing wheat, but the greater proportion of the losses to wheat fields chargeable to insects is due to the attacks of less than half a dozen species. The most destructive of these pests is the chinch bug. The great damage to farm crops by this insect is due to its wide distribution, its prevalence more or less every year, the enormous multiplication in favorable seasons and to the fact that it attacks all the cereals and most forage plants.

The next in importance is the Hessian fly. It is estimated that the damage to the wheat crop by this pest is about 10% of the product in the chief wheat-growing sections of this country, which indicates an annual loss of 40,000,000 bushels and over. Next of importance are the wheat midge and grain plant lice. Insects of second-rate importance are the wheat straw worms, the wheat bulb worms, army worms, cutworms and various sawflies.

With the view of limiting the losses from insect pests, and notably the Hessian fly, the ravages of which in 1899–1900 so reduced the normal yield of wheat as to seriously interfere with the winter milling interests, the U. S. Department of Agriculture has had prepared and will soon issue Farmers' Bulletin No. 132, entitled "The Principal Insect Enemies of Growing Wheat."

The bulletin was prepared by C. L. Marlatt, M. S., First Assistant Entomologist, and is a condensed account of the principal insect depredators on growing wheat, discussed chiefly from the standpoint of means of control. A brief presentation of the life histories of the several species is given, with special reference to the bearing of remedial and preventive measures.

The reasons given for the excessive damage by the various grain pests noted in this country are the system of growing the same grain crops over vast areas year after year, which furnishes the very best conditions for the multiplication of the insect enemies of such crops and the long, hot summers which also present the most favorable conditions for the increase of most insects. These two reasons are responsible for the much greater losses experienced in this country as compared with Europe, where the summers are cool and short.

The losses occasioned by these insects exhibit a wide range in different years, due as a rule to favorable or unfavorable climatic conditions and also to the abundance from time to time of the parasitic and other enemies, which is a natural sequence of the multiplication of the host insects. Preventives and remedies for the control of each of these insects is given. The bulletin is for free distribution and can be obtained by application to Senators and Representatives in Congress or to the Secretary of Agriculture.

Moth Trap Destroying Beneficial Insects.

To the Editor:—I think it would be wise to discourage the use of the Hazeltine moth catcher in our orchards; a large number of them are being used in this county by people who think they are catching codlin moths. I do not think any of them have succeeded in catching one yet; but they are catching large numbers of ladybugs; I counted eighteen caught in one night by one light. If people would realize that they are catching as many, or more, beneficial insects as injurious ones, they would not use them.

H. W. Wrightson.

Oleander, Fresno county.

This is a very important matter. If ladybugs are destroyed, our plants and trees will be ruined by plant lice. Are the diabroticas caught? These are sometimes called green ladybugs, but they are not ladybugs at all. If the trap catches them, we would be glad to know it. The specimen ladybug which our correspondent sends is a true ladybug, not a diabrotica.

The Whole Story in one letter about

Pain-Killer

(PERRY DAVIS'.)

From Capt. F. Loye, Police Station No. 5, Montreal:—"We frequently use Perry Davis' Pain-Killer for *pains in the stomach, rheumatism, stiffness, frost bites, chilblains, cramps*, and all afflictions which befall men in our position. I have no hesitation in saying that Pain-Killer *is the best remedy* to have near at hand."

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Write for Catalogue. 324-326 W. Santa Clara St.

FRUIT MARKETING.

Our Bad Work in Germany.

Consul Mason of Berlin writes to the State Department on the subject of "American Manufactured Products in Germany," in the course of which he says: "Against the honor and good faith of most American exporters nothing can fairly be said, but there are in several lines of business firms of easier conscience and sharper methods who do not hesitate to conduct their export trade on the ethical basis of a horse trade and who stoop to practices which are complained of by the victims to their local chambers of commerce, are reported and discussed in newspapers, and furnish the enemies of American imports with just the ammunition that they crave.

"Among cases of this kind which have been complained of at this Consulate during the past few months have been one of imperfect packing, and scores of cases in which California prunes and other dried fruits are not graded at all, except that one layer of selected pieces representing the grade sold is laid on the top, while the remainder of the box is filled with small, discolored, and wholly inferior fruit belonging to a different grade and bearing a wholly inferior price. This abuse has been so flagrant that certain associations of fruit growers in the Pacific States have been organized to grade, pack, and control the quality of their aggregate products; but the reform is not yet complete, and a recent shipment of dried peaches from San Francisco has been one of the worst on record.

"In no market of Europe will any trickery of this kind—any lapse whatever from absolute honesty and good faith in the fulfillment of a contract—entail such fatal consequences as in Germany, where every detail of commercial practice is still regulated by law, and where the purity and excellence of food products are guarded and enforced with a rigor which is all but fanatical."

Reports on Fruit by Foreign Consuls.

To the Editor:—Through the persistent efforts of Mr. E. F. Adams of the Chronicle, seconded by those of Mr. E. Goodwin of the Pacific Commercial Museum, the fruit growers of America are at last to receive the benefit of our Consular service.

Mr. Goodwin writes me, under date of May 28th, as follows: "I take pleasure in advising you that the Pacific Commercial Museum is in receipt of advices from the State Department at Washington that the U. S. Consuls at the points in southern Europe specified by the museum, were instructed on the 21st inst. to report regularly in the foreign markets and crops of prunes, raisins, walnuts and lemons, in accordance with the request from this institution. As soon as received these reports will be promptly forwarded," etc.

I trust that the reports will be of such scope and reliability and promptitude as to enure greatly to the benefit of the fruit growers of the coast. I bespeak for Mr. Adams and Mr. Goodwin the gratitude of our orchardists.

Edward Berwick.

Monterey, June 1, 1901.

United States Preserves in Germany.

Consul Hughes of Coburg writes as follows: It seems strange that our large producers of fruit preserves have never seriously tried to capture the German market for this line of goods. With the exception of the seaboard cities—Hamburg, Bremen, etc.—and a few places like Berlin and Dresden, preserves put up in the United States are not to be found, except, perhaps, where the resident consul has induced some storekeeper to put in a small stock.

It is a well-known fact that every German family, be it ever so humble, must have its "compot," or sweet, served with the meat at dinner. Where our dried fruits are known, they have been well liked and much used, but our jams and marmalades ought also to be pushed. As it is at present, either the Metz or English goods are used. Our preserves could be imported as cheaply, if it were done by the American preserver himself and not through the hands of German middlemen. First-class goods must be sent, carefully put up in one-fourth, one-half and one kiloggram (0.5509 pound, 1.1023 pound and 2.2046 pound) packages, either in glass or stone pots for the better-class trade, and in stone or wood vessels of five and ten kilogram (11.023 and 22.046 pound) sizes, from which the retailers may supply small customers.

Best of all would be for the American canning companies to establish depots in the interior cities of Germany, from which to sell direct to the small grocery stores, etc. These storekeepers, as a rule, are not wealthy enough to carry large stocks, and prefer to buy in small quantities and often.

Better Boxes for Raisins.

Consul Fleming at Edinburgh writes to the State Department: "It is suggested that raisins should be packed in heavier boxes than at present, as there is much waste through weak boxes."

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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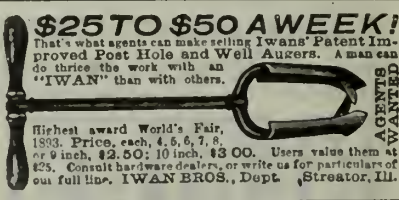

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Tulare Grange.

To the Editor:—Saturday, the 1st inst., was Children's Day in Tulare Grange. In this Grange the first Saturday in June, for a number of years, has been kept as Children's Day. This year, by order of the Worthy Master of the State Grange, Friday, the 7th of June, had been set apart for observance as Children's Day; but, inasmuch as this Grange had made all arrangements for its observance on the usual day before the Worthy Master's order, it was deemed inadvisable to change the day this year.

In the forenoon the members of the Grange and their families assembled at their hall and, after an excellent lunch, listened to a programme of exercises, which the children rendered very acceptably.

The National Grange having established the third Sunday in June of each year as Grange Memorial Day, the exercises of Tulare Grange will have special reference to the following who died in good standing: Sisters Mrs. A. J. Woods and Mrs. Adaler; Brothers Andrew Showers, A. W. Mathewson, Wm. Stewart, S. S. Ingham, B. F. Moore and Thos. Angelo.

The relatives and friends of these deceased brothers and sisters are specially invited to be with us on that day, services to be in Goldman's Hall at 2 P. M.

Many complimentary words were spoken of Sister Sara Gill for her tasteful and thoughtful decoration of the hall.

The next regular meeting of the Grange will consider several subjects, the special subject, designated by the National Grange Lecturer, being "Why is our Agricultural College entitled to the support and patronage of farmers, and in what way does a training at an agricultural college benefit a farmer?" There is also a supplementary subject that, in all probability, will be considered—"Are our public schools as useful as they might be, and what can be done to improve them?"

These subjects, for subordinate Grange consideration, are selected by the National Lecturer after much careful and deliberate thought. Their study will assist the progress and standing of our Order, and they should have ample consideration in every Grange.

There being a vacancy in the office of Secretary to the State Board of Horticulture, the Grange, by resolution, recommended Governor Gage to appoint Prof. C. W. Childs—a member of our Order—to the position, on account of his fitness and qualifications for it. J. T.

New Patents.

Dewey, Strong & Co.'s Scientific Press Patent Agency, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

For week ending May 14, 1901.

674,191—Drive Well Device—Allen & Grow, Hueneme, Cal.
673,995.—Preparation of Rye, Etc.—A. Bardet, S. F.
674,131.—Fruit Pricker—H. M. Barngrover, S. F.
674,232.—Seamless Tooth Crowns—B. B. Brewer, S. F.
674,232.—Seamless Tooth Crowns—B. B. Brewer, S. F.
674,161—Nozzle Holder—L. N. Brown, Los Angeles, Cal.
673,977.—Oil Burner—J. A. Clark, Los Angeles, Cal.
674,258.—Rotary Engine—T. Croston, Hoquiam, Wash
674,082—Bicycle—Eastman & Sayer, Adams, Or.
673,947.—Bedstead Fastener—Gilham & Souder, Lagrande, Or.
673,983.—Trombone—E. Harrison, Los Angeles, Cal.
674,115.—Wheel Nut—C. Heilrath, Sacramento, Cal.
673,871.—Steam Turbine—R. Hewson, S. F.
674,008—Lubricating Device—M. Kraker, S. F.
674,119.—Sole Edge Trimmer—E. F. Maxwell, S. F.
674,275.—Cut Off—A. W. Millen, Overton, Cal.
674,015—Dust Protector—J. E. Ragsdale, Fresno, Cal.
674,318.—Vehicle—J. Rey, Maxwell, Cal.
674,284.—Firearm—G. A. Sachs, Eugene, Or.
674,012.—Windmill—A. M. Springer, Portland, Or.
674,146.—Map—T. B. White, Portland, Or.

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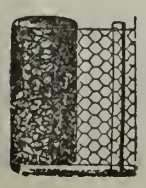

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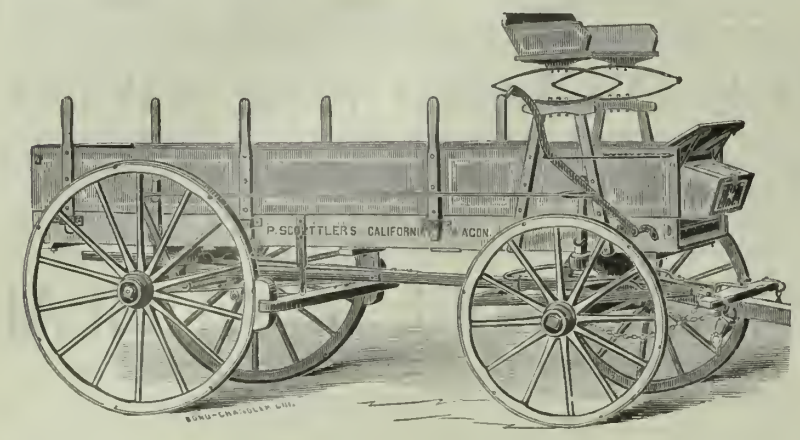

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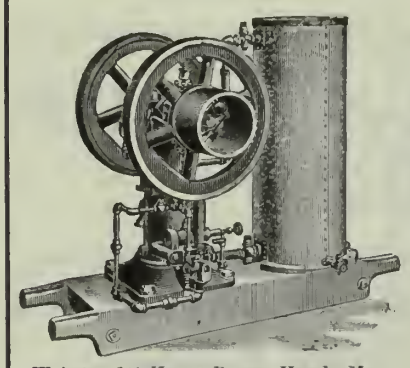
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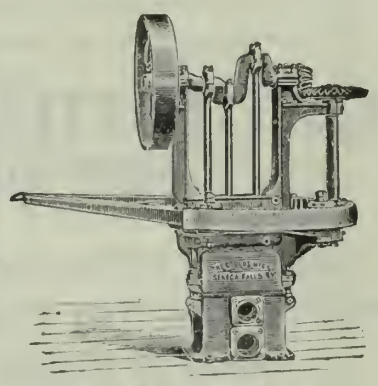
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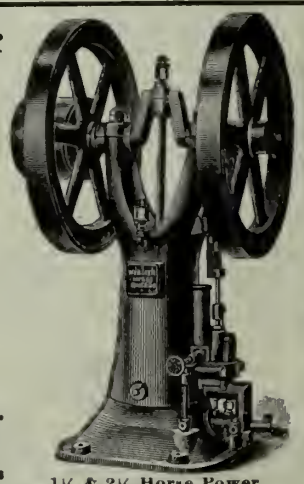
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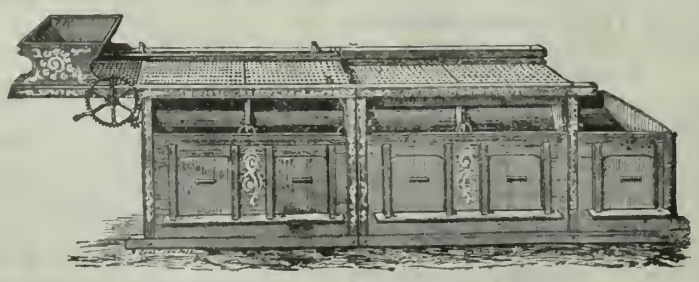

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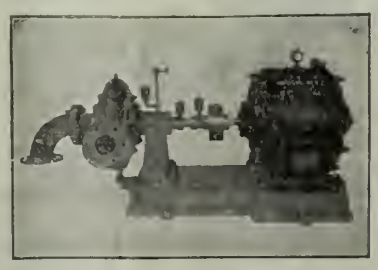

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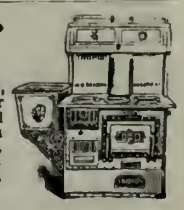

THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 24. SAN FRANCISCO, SATURDAY, JUNE 15, 1901. THIRTIETH YEAR. Office. 330 Market St.

The Wilmerding School.

Many of our readers manifest much interest in propositions for industrial education, and we doubt not that reference to it in concrete form in the Wilmerding School in this city will be widely acceptable. The school is at least so far a part of the University of California as to be administered by the regents of the University. It is also affiliated with the Lick School, as both institutions are under the directorship of Mr. George A. Merrill, and have shaped their courses of study so that one supplements the other. The administration of the Wilmerding School by a special committee, consisting of Regents J. F. Houghton, W. T. Wallace, S. C. Irving and President Wheeler, has been exceptionally wise and fortunate. By a circular which has just been issued, we learn that the regents received $400,000 from the estate of J. C. Wilmerding and that they have, from the accumulations of interest, bought the block of land, built the building, equipped it for the modern trades and have on hand in mortgages and cash $40,901.76 more than the original bequest. The annual income from investments is about $27,000; the annual expense, including salaries and incidentals, is about $20,400. Thus it is seen that expenditures are being kept well within the income, leaving ample funds for contemplated and necessary expansion. Nearly all the modern trades, in addition to a continuation of the grammar school requirements for entering, are taught by competent teachers, so that upon graduation the pupils go out with a good education in addition to full equipment for the special trade in which they have served their time.

One matter in connection with the school which seems to us of special significance as demonstrating the direct and practical character of the instruction is the announcement that the pupils will build a new building for their own use, of which the outline drawings on this page give a general idea. It will be a permanent, nearly fire-proof structure of brick and terra cotta, and work will be begun at the beginning of the next school year—July 24th. It will be built mainly by student labor, and will afford excellent instruction for several years. Its principal dimensions will be 160x70 feet. The two elevations shown are final only as regards the general mass and proportions of the building. If built by contract the cost would be about $60,000. The cost of materials alone will be about $40,000.

As to the arrangements for pupils, it is stated that any boy who has completed the grammar school is eligible for admission. Boys who have finished only the seventh grade will also be admitted, provided they are over sixteen years of age. Upon entering the school each boy begins an apprenticeship in one of the following trades: Carpentry, bricklaying, plumbing, blacksmithing, cabinet making, wood carving or clay modeling. The first year is probationary; at the end of that time any student who has failed to give promise of a successful career in the trade he has chosen will be required to change to another department.

Tuition is free and expenses for incidental things exceedingly small. The successful completion of a full apprenticeship of four years entitles the student to graduation as a journeyman. Any apprentice who leaves the school in good standing after two years' attendance will be granted a certificate showing the degree of proficiency he has attained in his vocation. The school will not guarantee positions to its graduates, nor will it promise equal ratings to all as journeymen. The first class will not be graduated until December, 1903, and it is hoped they will establish among employers a reputation that will ensure ready and remunerative employment for future graduates.

FRONT ELEVATION.

SIDE ELEVATION.

Building Which the Pupils of the Wilmerding School Will Erect for Their Own Use.

Shasta Daisies.

An adjacent engraving shows a snapshot at a few square feet of Shasta daisies—Mr. Burbank's improved marguerite—of which a description and full-sized bloom was given in the PACIFIC RURAL PRESS of February 23, 1901. It shows the profusion of the bloom; and when it is known that under good culture each individual bloom may attain a diameter of over four inches, some idea can be had of the dazzling whiteness and glowing gold of the display they make.

The Shasta Daisy—A New Marguerite by Luther Burbank.

GRAIN FIELD FIRES have multiplied during the hot spell. Henry W. Cowell of Stockton had 500 acres of very fine wheat and 150 tons of hay in stack destroyed on the west side and an adjoining field was partially burned, but saved by back-firing. There have been numerous fires in that vicinity along the railroad, and it is estimated that over 3000 acres were burned last week. The fires originate from sparks falling from the engines of the Southern Pacific. The wheat and barley are very heavy there this season, and the loss will run into thousands of dollars. The oil-burning locomotives do not cause any trouble, but the ones using coal set all of the fires.

C. T. ALLEN, a large sheep and cattle raiser of Ogden, Utah, declares that the number of sheep now dependent on the grazing lands of Western States is nearly 1,000,000 more than the ranges will properly support. As a result, tens of thousands of sheep must be marketed this year or allowed to starve. The increase in flocks has been greater this year than for many years, while grazing lands have been reduced in area throughout Washington, Oregon, Idaho, Montana, Wyoming and Utah by the influx of home-seekers and by the limiting of the number of sheep permitted on forest reserves.

THE Cahuenga valley, near Los Angeles, is getting in a good season's work with tomatoes. Twenty-two tons were shipped from Hollywood to San Francisco last Saturday, and during the last three preceding steamer days sixty tons were shipped to the same place. Hollywood is situated in the famous frostless foothill belt in the Cahuenga valley. Tomato growing has become a great industry in that section.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 15, 1901.

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The Week.

The week has been fair and free from extremes and crops of all kinds have proceeded favorably, as the report of the Weather Bureau on the following page will show. The behavior of people gives more concern now than that of the clouds. The strike of the labor unions is not alarming in its results thus far but the spirit is rife and has broken out this week in the form of a rumpus among the butchers. This may affect the stock markets considerably before it is over—in fact it has already unsettled things somewhat. It is a bad time of the year for the farmer to have the city out of sorts, for his whole year's success depends upon a summer's work under favorable conditions for trade and transportation without which buyers are loth to proceed. The present outlook is a little squally but it may clear all right.

We have little that is interesting in the markets this week. Wheat futures are lower, and though spot is unchanged, it is not strong. Three cargoes have gone out for Europe and one cargo of rye has started for Belgium. We have more rye to spare. It is not often that it goes by shipload. Barley is weak and lower; new is coming forward and buyers retiring; but old barley stocks are light for all that. Oats are scarce and high and new crop not yet in. Corn is unsettled with more Eastern offering. Beans are steadily held, but quiet. A corner in Bayo beans is talked about. Millstuffs are unchanged, except as barley and corn come at lower prices for grinding. Hay is a little easier for new. Meats are unsettled by the strike; hogs would otherwise be firmer, as our prices are below Eastern equivalents. Potatoes are lower and in lighter demand. Onions are unchanged and steady; new yellow onions are arriving in fair shape. There are large supplies of common early fruits, except cherries, which are scarce. Berries are weak and lower. Choice oranges are firm; lemons are slow, owing to cool weather. There is some movement in prunes at a 2¼ to 2½c basis. Some inquiry is heard for new dried apricots, but bids are still too low to suit growers. Bleached Sultanas are firm and said to be in short supply. The demand for fine free wool continues, while other kinds are neglected.

The hay business just at the moment is in rather queer shape. Interested holders in the city are talking up values and the outlook so diligently that one is prompted to wonder why they should be so eloquent on the growers' side. Perhaps some part of the disposition may be due to their desire to do all they can with municipal sunshine. At all events, the report comes from San Jose that E. M. Percy, a large hay grower of Santa Clara county, has offered to break the combination formed by hay firms who deal with the San Francisco Supervisors and Fire Commissioners, who purchase upward of 1000 tons each year. Mr. Percy has mailed to the Fire Commissioners and Supervisors of San Francisco a letter calling attention to the fact that if those bodies dealt directly with the farmers they could save from $3 to $5 per ton. In the bids submitted last week the hay combine's lowest price was $13.06 for No. 1 wheat, and $12.60 for oats. Percy offers to furnish No. 1 wheat, delivered in San Francisco, at $10.50 and oats at $8.50. It is stated that a meeting of hay men will be held to see if they cannot deal directly with the Supervisors and Commissioners.

Early reports from Frank E. Emery, whose departure to exploit the dairy markets of the Orient we noted a couple of months ago, show that he is pushing his errand vigorously under the auspices of the U. S. Department of Agriculture. One report in the Chronicle is that one day in Yokohama he examined nine varieties of foreign butter, and, while they were nicely prepared and packed, all were hopelessly rancid, and in no way could compare with the product packed in America. He secured an order for a shipment of California cheese to be sent to a prominent Yokohama dealer, which is to be the first of a series of monthly shipments. Mr. Emery has with him two tons of dairy samples, packed in export cases, which are mainly from twelve leading San Francisco business houses, with a few selected from Eastern dealers, and, with these, he will endeavor to show plainly the superiority of the American products and secure a share of the growing trade which is sure to follow the development of civilization throughout the Orient.

As can be seen by a sketch on another page of their meeting, just after last week's PACIFIC RURAL PRESS went to press, the prune people will continue their effort for successful transaction of their own business, and the leadership of the effort will be in the same hands as last year. The vote was so strong that way that the conclusion is irresistible that the voters either loved the incumbents or hated the procumbents very heartily. It seems to us very clear that the result of the election is favorable to the success of the Association. The year's training has certainly been of much value to the directors; they acknowledge the errors they committed; they can not be misled again the same way, and the chances are less that they will be misled at all than it would be with new men. Then it is going to be an easier year to succeed this year, apparently. We trust all that is anticipated by the stockholders of the Association will be realized.

San Francisco is to have a busy midsummer this year because of the many thousand Eastern visitors who will assemble in the interests of the Epworth League and other associations. It is a good idea to have a grand industrial display for their entertainment and edification. It is reported that good progress is being made in preparations for the county exhibits at the Mechanics' Pavilion during the League Convention. An adequate and attractive display of the resources and products of the State is assured. For the most part the expenses of the exhibits will be borne by the Boards of Trade of the various counties. In a few instances Boards of Supervisors have made appropriations to meet the expenses. The Eureka Board of Trade has secured a choice central position and will install an especially attractive exhibit of Humboldt county products. A section of a redwood tree 25 feet in diameter will be hollowed out and put up as a circular room to house the exhibit. The furniture of the room will all be of polished redwood burl. The southern California counties will group their exhibits in one large circular area. In short, we will take a whack at the stay-at-home Eastern people by the display at the Pan-American show, and those who fly from that will get caught in San Francisco.

QUERIES AND REPLIES.

Alfalfa, Cheese and Goats.

TO THE EDITOR:—Where can seed of Persian alfalfa be had, and how does it compare as a fodder crop with alfalfa? What is an average daily yield of cheese per cow in a cheese herd? What is the value of Angora bucks—not the extra fancy goat, but such as a farmer can afford to breed from?—HACIENDA, Los Angeles.

We presume you refer to Turkestan alfalfa, of which a full account in its native country was published in the PACIFIC RURAL PRESS of January 20, 1900. It has not been sufficiently tried in California to make its value clear, nor does such wide trial seem likely to be immediately attained, because of lack of seed. To follow up the matter in this country, you should send to the Division of Agrostology, U. S. Department of Agriculture, Washingington, for their Circular 68 on Turkestan alfalfa. This quotes four parties in southern California who speak well of the plant in a preliminary way; also, a report from the University Experiment Station mentioning it favorably at Pomona and Paso Robles. All this is evidence favoring wider trial of the plant whenever seed becomes available.

Until we have some standard for the annual milk yield of a cow, we can have no standard of the cheese yield. According to reports made to us by dairymen in all parts of the State, the average milk yield of dairy herds runs from 2500 to 6000 pounds per cow per year, and counting ten pounds of milk to one of cheese (which is a little more than it ought to take), the cheese yield would range from 250 to 600 pounds per year. Though 6000 pounds of milk per cow is attained in a number of instances of rather small, selected and particularly well kept herds, it is hard to bring a large herd to any such figure—in fact, 4500 pounds is rather high. As ordinary cows go, we doubt if a herd average would usually go above 350 pounds of cheese. This is a very important matter and we would like to hear from all who are doing better with any considerable number of cows.

No Angora buck is worth having unless he is the best that can be had. Almost the whole value of the hair turns upon getting exceedingly high-grade goats and nothing short of a pure-bred buck should be used in grading. Fortunately, these pure-breds are now quite abundant and can be had at prices which are only a fraction of what their imported progenitors cost. Write for information and prices to those who advertise Angoras in our columns.

Leaf Aphis.

TO THE EDITOR:—A small, green insect, very much resembling the rose louse, but slightly smaller, feeds on the young and tender leaves and shoots, stopping the growth and finally destroying the tree. Last season they appeared in a young orchard of mine, and, as I knew of nothing better, I used the kerosene emulsion, which was effective, only that it had to be used every few days. They have already appeared on a nursery of young trees I am raising, and I would like very much to know if there is any effective preparation for their destruction. — READER, Trinity county.

A good, thorough application of well made kerosene emulsion should check all such invaders. Several applications may be necessary, as it is almost impossible to reach all the pests, and the survivors multiply like lightning. As some readers may have lost the recipes we have previously given for kerosene emulsion, we repeat as follows: Dissolve three-fourths of a pound of common laundry soap in one gallon of boiling water and add this hot to two gallons of kerosene. Churn this mixture by means of a force pump and nozzle—pumping it back into itself for five or ten minutes, or until the emulsion appears in a creamy form. Take one part of this emulsion to nine parts of water and you are ready for spraying.

Liquid Manure Cistern.

TO THE EDITOR:—I am putting a cement floor in my dairy barn and do not know how large a cesspool to make for the liquid manure. The barn will hold forty cows and will be drained into one pool. If the liquid manure be removed every two or three days, how many gallons' capacity should be provided?—F. B. MARKS, Dos Palos.

You can count about two gallons per day per cow as the voidance of liquid; but there will be some reduction of bulk by evaporation and some by absorb-

ence by litter, etc., before it can reach the cistern. On the other hand, you will use some water in flushing the flow, and this will go to the cistern. You can guess at the desired capacity with the above data, coupled with frequency of emptying, as nearly as we can.

Apparently Lack of Moisture.

To THE EDITOR:—Enclosed please find twigs from Salway peach trees. You will note the end of each is dead and leaves appear to have been stung by insects. I wish you would inform me through your paper or otherwise what is the cause of their being so and also the remedy. The trees are large and have always been healthy till this season. There are 300, and but two that are not affected. I plowed under a heavy crop of rye just before the heads began to fill. The rye did not heat, but the ground was somewhat dry. I did not fertilize.—L. W. LEAK, Auburn.

There is no disease discernible nor evidence of insect injury. The specimens have all the indications of coming from trees which have been suffering for lack of moisture for some time. Last year's growth was only two or three inches in length and hardly thicker than a coarse knitting needle. This shows that the trees were not in good shape last year. This year there is no offer of new wood, but merely a growth of leaves only about a quarter of the proper size, and these are now dying. The trees are evidently famishing. The growth of the rye robbed them of much moisture which they should have enjoyed, and the plowing in of the coarse rye crop occasioned a still further loss of moisture by evaporation. Unless the trees are well irrigated, they are likely to die outright before the end of the present summer. We should cut back, saving young wood if there are any stronger shoots below and give the trees good irrigation during the balance of the season. It is evidently impossible for the trees to be satisfactory unless they have more generous treatment in the future.

Gophers and Moles.

To THE EDITOR:—Can you inform me through your columns how to get rid of gophers and moles, as I have tried two kinds of poisoned wheat and raisins with strychnine in them, but without success? The pests are ruining my lawn.—C. S., Santa Rosa.

If you have placed these poisons in the runways without results, it is probable that you have to deal with moles, rather than gophers. You can determine this by watching. Gophers at times leave their burrows open and you can see them reaching out and eating the surrounding vegetation. A shotgun at such times is a very satisfactory tool, and you can kill wise old gophers who may not take your poison. If you find large mounds of dirt thrown out freely, but never see an open hole or a prospecting varmint, you may conclude that you have to deal with moles and not gophers. The best thing then is to get a mole trap, which is placed near where the mole is working in such a way that his pushing out dirt sets off the trap, which, by means of a strong spring, shoots sharp spikes through the dirt into the mole below. It takes a little practice to place the trap just right, but it works well when you learn this. We have driven away moles by using a squirrel smoker, which forces into the runway smoke from damp straw and sulphur burning in the machine; but the mole trap, after you have learned to use it, is the best device. It is also possible to catch moles with gopher traps if they are well placed in the runways.

Dieback of Cherries.

To THE EDITOR:—I notice some of my cherry trees seem to be dying at the top; the leaves look yellow and are gradually dropping off. Is there any remedy for it? I send you a sample of leaves. I have been watching the columns of the PACIFIC RURAL PRESS for some item in regard to it, but failed to notice, so I thought I would write you direct.—GROWER, San Jose.

The cherry leaves which you send show a little of the fungus causing leaf spot, but not enough to account for such manifestations which you describe. It is almost always possible to find on thoroughly healthy and vigorous trees as much leaf spot as your trees show. The chief injury to the leaf seems to be a dying-back, which is in all probability due to some trouble in the soil. It might be caused by drying out of the subsoil, or it might be caused by too much water in the subsoil, if irrigation is used. The only way in which you can demonstrate the matter would be to dig holes to the depth of four or five feet and see the condition of the subsoil. Remedies would be drainage in case of excess of water, or irrigation if there is not enough natural moisture. For special treatment we should cut back below the injured portions, in the hope that the trees would have strength enough to carry the foliage and wood which is now in good condition.

Grape Bloom Beetle.

To THE EDITOR:—I have an arbor with American grapes growing over it, about four years of age. Last year the vines bore a few bunches of grapes, but these small beetles fed on the grapes and left nothing but the stems. The grapes are just blooming and I am catching from fifty to sixty of the beetles a day by jarring them in a can with a little coal oil in the bottom. I suppose I could keep on catching them in this way every day and still never get rid of them. Would it do to spray the grapes with Paris green, say one pound to 180 gallons of water? I am afraid to try it till I hear from you. The little grapes now are about the size of pin heads.—GROWER, San Lorenzo.

We are unable at this moment to definitely classify the beetle which you sent, nor have we any reference to a beetle doing just the sort of work which you describe. So far as treatment goes, however, this does not particularly matter. You have a choice between shaking off the beetles and an effort to poison them. There would be no danger whatever in using Paris green spray while the grape bunches are in their present condition. This view is based upon the fact that Paris green has long been used for the killing of flea beetles and other insects which injure the foliage of the vine, and in this practice, of course, the young bunches must have received part of the spray. We would not hesitate to use Paris green spray, about one pound to 200 gallons of water, so far as any fear of poisoning the fruit might go. Probably nothing short of an arsenite poison would stop the work of these insects.

Red Spider on Nectarines.

To THE EDITOR:—I see in this week's PACIFIC RURAL PRESS a wash for red spider. I have about 250 nectarine trees which are loaded with fruit, but the red spider is beginning its work so that some of the trees are nearly bare. Could I apply this sulphur wash now without damage to fruit? We have been spraying with water but do not see any change in trees. Last year I had all the trees sulphured with dry sulphur, put in a sack, and tied to a long stick and shaken over the tree when they first came came out in leaf, so the trees had no red spider at all last year, and we had a good crop of nectarines.—GROWER, Clovis, Fresno county.

The wash described on page 366 of last week's issue is so highly diluted that we should apprehend no stain from it. In a case like yours it is very necessary that the work should be done, and speedily and thoroughly, because from what you say the spider has already secured a good start and it will be something of a question whether you can save enough foliage to insure the satisfactory progress of the fruit. In places where red spider is to be expected, treatment should begin much earlier in the season before the insects have time to multiply to such an extent.

Grape Vine Mildew.

To THE EDITOR:—Is not mildew caused by damp, sultry weather? Every grape grower that I have talked with on the subject of mildew claims that it is caused by cold north wind. I cannot believe it unless you decide in their favor. They also sulphur Zinfandel vines before mildew makes its appearance. That looks like giving a healthy child medicine to keep it healthy.—GRAPE GROWER, Cloverdale.

Mildew is certainly promoted by a draft of cold air, especially if it carries a considerable amount of moisture. A straight north wind is usually too dry, but a northwest wind will cause a rapid increase of the trouble. Sulphur applied in advance supplies the vapor to kill the fungus at its first appearance. It is a very wise thing to do where experience shows that vines are quite liable to mildew. It is hardly like medicating babies; it is, perhaps, more like vaccinating them. No matter how strongly the vine may be growing, it will mildew if the germs arrive and conditions are favorable for their growth.

Apple Scab.

To THE EDITOR:—Can I trouble you to give me information regarding the spots on the apple enclosed? Many of the orchards in this neighborhood seem to be similarly troubled.—ORCHARDIST, Eccles, Santa Cruz county.

The disease is apple or pear scab—the ruin being wrought by a fungus (Fusicladium dentriticum). The proper treatment is spraying with a lime, salt and sulphur wash, or the winter strength of Bordeaux mixture, while the trees are dormant, followed by the summer strength of Bordeaux as soon as the leaves are well out; or add one pound of Paris green to each 200 gallons of Bordeaux if you wish to strike both the scab and the codlin moth at one spraying. Constant attention to these treatments is necessary in regions where this scab fungus thrives.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 10, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature has continued slightly below normal during most of the week, and conditions have been generally favorable for grain and hay. Dry northerly winds caused slight damage to wheat and barley in some sections. Prospects are still good for large grain crops in all parts of the valley. A heavy crop of hay is being harvested; the quality is excellent. Hops are making vigorous growth and will probably yield a large crop. New potatoes of excellent quality are in market, and garden products are plentiful. Green feed needs rain, but is still abundant in some sections. Deciduous fruits and grapes are in good condition, but are not maturing rapidly, owing to cool weather. Citrus fruits are thrifty.

COAST AND BAY SECTIONS.

Warm days and cool nights during the week have been favorable for crops, though somewhat retarding the ripening of deciduous fruits. Grain has ripened rapidly, and harvest has commenced in some sections. At Nipomo, San Luis Obispo county, where heading is now in progress, the grain is reported heavy and plump. Reports from all grain districts indicate that unusually large crops of wheat, barley and oats will be harvested. Haying is nearly completed; the largest crop ever raised in San Benito county is being harvested. In Alameda county the hay crop is heavy and free from rust. Grapes and deciduous fruits are in good condition, but will probably yield less than the average in many places. Apricots, pears and prunes are reported full crops in the vicinity of Niles. Corn, sugar beets, hops and beans are thrifty.

SAN JOAQUIN VALLEY.

The weather has been clear, with warm days and cool nights, which were very favorable for the developing and maturing of the grain crop. High north winds occurred in some localities, but did no damage. Haying is nearly completed, and a large crop of good quality has been stacked. Grain harvest has commenced in some localities, and the yield has been very satisfactory. The cutting will be general in about a week. Some grain fields near Corcoran which were flooded by the levees breaking will probably be a total loss. Deciduous fruits and vines are making fine progress. Some peaches, apricots and berries are being marketed, and canneries will commence work next week. Water is plentiful. Green feed is abundant, and all kinds of stock are looking well.

SOUTHERN CALIFORNIA.

The weather has continued cool and cloudy or foggy nights and mornings, with moderately high temperature during the days. Conditions have been favorable for citrus fruits, grain and sugar beets, but somewhat detrimental to deciduous fruits and hay. The Hessian fly pest has quite seriously damaged wheat in portions of the San Gabriel valley. In other sections grain continues in good condition and will yield a fair crop in many places. Haying is progressing slowly, and the yield is not as expected, much of the crop having been damaged by late rains. Beets and beans are doing well. Walnuts are thrifty and will be equal to the average. Grapes are in good condition.

EUREKA SUMMARY.—Unseasonably cool, with fresh northerly wind nearly all week. Warm weather is much needed to promote the growth of grain, vegetables and fruit. Haying is progressing slowly; yield good.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 12, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka	.12	47 52	50.03	43.97	60	42
Red Bluff	.00	24.63	22 94	26 38	88	48
Sacramento	.00	20 21	20.24	20.23	84	48
San Francisco	.00	21.17	18.43	22.39	66	46
Fresno	.00	11.31	10 27	8.80	92	48
Independence	.00	5.87	3.69	4 62	88	48
San Luis Obispo	.00	31.13	17 21	16 79	78	40
Los Angeles	.00	16.28	7.91	17.22	74	48
San Diego	.00	11.41	5 94	9.41	66	58
Yuma	.00	3.60	1.29	2.89	100	62

THE VINEYARD.

The Phylloxera of the Vine.

By Frederic T. Bioletti, in Bulletin 131 of the University of California Experiment Station.

The late discovery of the phylloxera of the vine in several important grape-growing districts which have hitherto been regarded as exempt, has awakened widespread interest, and even alarm, among both wine and raisin producers. In order to satisfy the demand for information regarding this serious enemy of the vine, to allay the alarm of those who exaggerate its menace to the industry, and, at the same time, to rouse up to prompt and intelligent action those who are inclined to minimize the danger, the following brief account is issued:

Historical.—The phylloxera is a native of the United States east of the Rocky mountains, where it is found living upon the wild vines. It is a minute insect related to the scale insects and plant lice. It was introduced into the south of France before 1863, upon rooted vines sent from America, though the insect itself was not found and described there until 1868. The infection commenced at two points—one in the southeast, in Gard, the other in the southwest, near Bordeaux. In 1868, when the nature of the pest was understood, it had already invaded considerable areas. The two areas first attacked gradually enlarged until they touched, about the year 1880, and the insect began to spread northward. By 1884 about 2,500,000 acres—more than one-third of all the vineyards of France—had been destroyed, and nearly all the rest were more or less affected. The progress of the disease in parts of southern France was so rapid that in some towns vine stumps became the principal fuel. Since 1884 the pest has continued to spread with somewhat less rapidity in France, partly because the most densely planted vineyard districts had already been devastated, but also because elsewhere its progress was retarded by quarantine and other restrictive measures. No remedies yet discovered, however, are capable of exterminating the pest; and to-day there is no vine-growing region of any importance in France, or elsewhere, exempt from phylloxera.

The insect was probably introduced into California upon vines—cuttings or roots—imported from France, though it was possibly introduced from several sources and at several points. It was first noticed in the southern part of Sonoma county, in the valley surrounding the old town of Sonoma, about 1874. By 1880 vines killed by the insect had been found in Napa, Solano and Placer counties, and hundreds of acres had been pulled up in Sonoma valley. Since then the insect has spread to all the important grape-growing regions of California north of Tehachapi,* and probably not less than 30,000 acres have been destroyed.

The Insect.—The phylloxera occurs normally in four forms, which have been called by Victor Mayet:

1. The gall insect, or form of multiplication.
2. The root insect, or form of devastation.
3. The winged insect, or form of colonization.
4. The sexual insect, or form of regeneration.

The gall insect lives upon the leaves, and is the commonest form on the wild vines in the native habitat of the insect. It rarely occurs in California. In Europe it is often found upon American and rarely upon European varieties. It causes little swellings or galls upon the leaves and younger parts of the vine, which, though sometimes very numerous, do little permanent injury. The chief danger from the gall form is that it multiplies with astonishing rapidity and migrates from the leaves to the soil. Here it attacks the roots and gives rise to the root form, which is the "form of devastation," the one which finally destroys all the vines it attacks which are "non-resistant." Every insect of the root form which reaches maturity lays about twenty-five or thirty eggs, each of which is capable of developing into a new egg layer, needing no fertilization. As there are from five to seven such generations during the year, the increase in numbers is extremely rapid.

Sometimes during the summer, usually in July or August, some of the eggs laid by the root insects develop into insects of slightly different form, called nymphs. They are somewhat larger than the normal root form and show slight protuberances on the sides, which finally develop into wings. These are winged or colonizing insects, which emerge from the soil, and, though possessing very weak powers of flight, are capable of sailing a short distance, and, if a wind is blowing, may be taken many rods or even miles. Those which reach a vine crawl to the under side of a leaf and deposit from three to six eggs. These eggs are of two sizes, the smaller of which produce males and the larger females. The female, after fertilization, migrates to the rough bark of the two-year-old wood, where she deposits a single egg, called the winter egg, which remains upon the vine until the following spring. The insect which hatches from this egg in the spring goes either to the young leaves and becomes a gall maker, or descends to the roots and gives rise to a new generation of egg-laying root feeders. The normal and complete life cycle of the phylloxera appears to be as follows: Male and female insects, one generation in autumn; gall insects, one to five generations while the vines are in leaf; root insects, an unknown number of generations throughout the year; nymphs, which become winged insects, one generation in midsummer. The gall stage may be omitted, as it generally is in California, and the insects which hatch from the fertilized eggs laid by the female go directly to the root and produce offspring, which are indistinguishable from the root form produced in the normal cycle. For how many generations the root form can exist and reproduce and exist without the invigoration supposed to come from the sexual form is not known, but certainly for four years and probably for more. The gall form on American vines can be prevented by spraying the vines in winter with liquids to kill the winter eggs; but this treatment has no effect on the root forms, which in California hibernate abundantly in the soil.

All forms of the phylloxera are extremely minute, the root form being about one-twenty-fifth of an inch long when it reaches the adult egg-laying stage, and little more than half this length when young and active. It is just large enough to be seen by the unaided eye in a good light when its appearance is known, and, by the help of a glass magnifying five diameters, its legs and antennæ are plainly visible. Its color is light greenish-yellow in summer, and somewhat darker in winter; so that when numerous the attacked roots appear as though dusted in spots with powdered mustard or cinnamon. The newly-hatched insect is fairly active, and at first moves about from place to place on the roots; but finally, when it reaches the egg-laying stage, inserts its sucking tube into the root and remains fixed.

Nature of Injury.—The amount of nutriment taken from the vine by such minute insects, even when present in the immense numbers in which they sometimes occur, is not sufficient to account for the disastrous effect upon the plant. The death of the vine is due to the decay which sets in wherever the phylloxera has attacked the roots. Wherever a phylloxera inserts its sucking tube a swelling is produced, composed of soft tissue, which soon decays. When this swelling occurs at the end of a young rootlet, growth in length is stopped; when it occurs on the larger roots, a kind of "cancer" or decay spot is finally formed, which soon extends around the root, and all below the point of attack dies.

During the first year or two after a vine is attacked there is little apparent damage. In fact, the effect of the phylloxera is equivalent to root pruning, and in some cases results in an unusually large crop of grapes. The year after this crop, however, the vine having endured the double strain of heavy bearing and root injury, is unable to recuperate and generally dies. In rich, moist soil the death of the vine is not so sudden, and two, or even three, small crops may be obtained after symptoms of the disease are evident.

Fig. 1. Fig. 2.

Fig. 1. Young roots of vine attacked by phylloxera.
S—Nodosities or swellings caused by the insect
B—One of these nodosities enlarged, showing position of the insect (P) and one-sided character of the swelling.
Fig 2. Galls or swellings caused by Nematode worms, which occur on vine roots in wet soils. Note their symmetrical axial character, which distinguishes them from phylloxera nodosities.
M—Eggs of the nematodes found in these galls.

Methods of Dispersal.—The ways in which new vines and vineyards become infested may be classed as natural and artificial. The natural ways may be inferred from what has been said of the life history of the insect. From a vine first attacked the root form spreads through the soil to neighboring vines slowly but continuously, thus forming the so-called "oil spots." A typical oil spot of several years' standing will show several dead vines in the center, then a ring of vines with very short growth and no grapes, next another ring where the growth is not of normal vigor, but where the crop may be equal to or larger than that of the healthy vines. Such a spot enlarges its area year after year at a gradually accelerating rate as the front of the invading army becomes longer. The rate of advance will vary with the soil and climate, but will probably never exceed 40 feet or 50 feet annually. If this were its only method of spreading, the insect could be controlled or even exterminated with comparative ease. Unfortunately, it is able to spread much more rapidly by means of the winged form, and the rapidity of its extension over the south of France was due principally to this agency. In California, though the winged form has been found, it seems to be rare, which probably accounts to some extent for the comparative slowness with which new districts have become infested. The artificial methods of dispersal are here probably more effectual in spreading the insect than the natural. The insects are taken from one part of the vineyard to another on pieces of the roots of infested vines, adhering to the plows or other implements used in cultivation, while they are introduced into new localities on rooted vines or cuttings brought from infested districts.

Methods of Combating the Pest.—The methods to be used in resisting this foe of the vineyardist may be divided into groups corresponding to different stages of infection and to varying local conditions. There are three cases to be distinguished, viz.:

1. The district is uninfested.
2. A few small infested spots are known in the district.
3. The district is badly infested, i. e., shows many and widely distributed infested spots, even though none of the spots is large.

Keeping Out the Insect.—In the first case all efforts should be directed to keeping out the pest, and the only effective means is a rigidly enforced embargo on all material capable of introducing it. Wherever the vineyard interest is of sufficient importance this should extend to the exclusion from infested districts not only of all vine roots and cuttings, but also of all other plants, such as nursery stock, potatoes, etc., which are taken from below the ground. Although the phylloxera, so far as known, feeds on nothing but the vine, there is always danger of eggs or insects being contained in the earth attached to any kind of root. This measure, consistently carried out, has kept the province of Algiers free from infection, though the neighboring province of Constantine has been a prey to the pest for many years.

Eradication.—In the second case, where the insect has already obtained a foothold, the first step to take is to determine as nearly as possible the exact extent of the infested area. If it is found to be confined to a small, isolated vineyard, an effort should be made to completely eradicate the pest. This can be done only by destroying the vineyard, subjecting it to what is called the "death treatment." This is best done (after grubbing up all the vines and burning them on the ground) by making an embankment around the whole vineyard and then running water onto it until it is converted into a lake. The water should be kept continuously at a depth of at least 6 inches until all the insects are destroyed. The best time to do this is in May or June, as at that time four weeks' continuous flooding is sufficient to kill both insects and roots. It is important that every root should be killed in order that, if any insect survives the flooding, it will die for lack of food. Where flooding is impracticable, the vines should be grubbed out and burned in the same way, and the ground kept clean of all growth for at least one year. This is in order that any suckers which may come up from the roots may be destroyed immediately. If crops, or even weeds, are allowed to grow, some of these suckers may escape observation and serve to keep the insects alive to spread the pest the next year. If the affected spot is not too large, it is well to disinfect the soil with bisulphide of carbon. This is applied by pouring one ounce each into holes placed 2 feet apart all over the land to be treated. These holes should be about 1 foot deep and can be made with a small crowbar or dibble. After pouring in the liquid, the hole should be closed by pressing earth into it with the foot.

In a Badly Infested District.—If, however, the pest has obtained a foothold in several vineyards of the district, or in a large vineyard, it is practically hopeless to attempt to eradicate it. In this case all we can reasonably hope to do is to delay the spread of the pest as much as possible and in the meantime to place all new vineyards on a permanently phylloxera-resistant basis. Every infested spot in the district should be diligently sought out and treated. The treatment consists in digging up and burning every vine in each spot which shows symptoms of attack, together with at least three rows of apparently healthy vines surrounding them. Disinfection of the soil of these spots by flooding or with bisulphide of carbon is then advisable wherever practicable, but in any case these spots should be strictly isolated in all farming operations. In cultivating the healthy parts of the vineyard, to pass through the infested spots with plows or hoes is a most effective method of accelerating the spread of the insect. The search for infested spots is most easily and thoroughly done in July or August, as at that time the shortness of growth in the "oil spots" is more readily detected and the insects are easily found, as they are in large numbers on the surface roots and generally also on the trunk of the vine just below the surface of the soil. The search for and destruction of infested spots

* The phylloxera is said to have been found once in southern California; but, as the vineyard was uprooted and destroyed, the insect was probably extirpated.

should be repeated every year, and if commenced in the early stages of infection and prosecuted thoroughly in every vineyard throughout a district will effectually prolong the life of the bulk of the vines for many years. As soon as the actual presence of the phylloxera is a district is known, and all hopes of permanently eradicating it are abandoned, the embargo should be modified to the extent of admitting vine cuttings. These should be introduced, however, under strict quarantine regulations, including disinfection by responsible and properly instructed persons. Rooted vines, or cuttings with pieces of old wood attached, should still be kept out, as they cannot be disinfected with any certainty.

However conscientiously and completely these measures are enforced, a time will arrive sooner or later when the cost of inspection and eradication will be greater than any benefit to be derived from them. We are, then, face to face with the third set of conditions. We must accept the phylloxera as a permanent inhabitant of the district and consider the best method of growing our vines in spite of its presence. By this time all embargo or quarantine regulations are useless and should be repealed.

Of the many thousands of methods proposed and tested for maintaining a vineyard in spite of the phylloxera, but very few have been of the slightest practical value, and only four are at present used to any important extent. These methods are:

1. Injection of carbon bisulphide.
2. Flooding or submersion.
3. Planting in sand.
4. Planting resistant vines.

The first two methods aim at destroying the insect, the last two at rendering the vines immune to their attack. As neither of the insecticidal methods can be applied with sufficient thoroughness to completely eradicate the pest without also killing the vines, the treatments have to be repeated every year in order to destroy the offspring of the few insects which escape the treatment of the previous year. For this reason these methods are being abandoned everywhere, especially in all new plantings, in favor of the others, which after the vineyard is properly started involve no further expense; and as planting in sand is of very limited and local applicability, it may be said that at present the only method that need concern grape growers in California very seriously is the use of resistant vines. This tendency to resort to resistant vines to the exclusion of all other methods is well illustrated by the following statistics of the vineyards of Herault, one of the chief grape growing districts of France, and that in which the conditions most resemble those of California:

	—ACRES OF VINES—		
	1880.	1890.	1899.
1. Carbon bisulphide	6,600	6,200	800
2. Submerged	3,900	15,000	11,000
3. Planted in sand	.....	9,900	1,200
4. Resistant vines	6,600	311,000	440,000

Bisulphide of Carbon.—This is a liquid which volatilizes very rapidly at ordinary temperatures and gives off a poisonous and highly inflammable carbon. This vapor is heavier than air and therefore gradually replaces and saturates the air in the interstices of the soil when the liquid is injected. It is used at the rate of from 125 to 250 pounds per acre, and may be applied at any time except during blossoming and the ripening of the fruit. Two treatments, one directly after the vintage and the other a week or so before blossoming, give the best results. The liquid is applied by pouring from one-quarter to three-quarters of an ounce into holes made from 18 inches to 2 feet apart all over the vineyard, care being taken not to put any nearer than 1 foot from a vine. The holes are made from 12 to 15 inches deep, and are closed immediately after pouring in the liquid by pressing the soil with the foot. The holes may be made with an iron rod or dibble; but where the method is employed on a large scale special injectors are used, which may facilitate the work. The injections are best made when the soil is fairly firm, and it is neither very wet nor very dry. This method succeeds only in rich, deep, loose soils, and cannot be used successfully in soil containing much clay, or on dry, rocky hillsides. It is most effective in sandy soils, where the nature of the soil is itself unfavorable to the insect. It is least successful in warmer locations, where the insect is prolific and most harmful, and is used chiefly in the cooler locations, where the phylloxera does least damage. Vines which are much weakened by the attacks of the insects cannot be successfully treated, and all treated vines require fertilization and most thorough cultivation. The annual cost of material alone would be from $15 to $25 per acre, at the present market price of carbon bisulphide.

Submersion.—This is a cheaper and more effective method of controlling phylloxera, but is necessarily applicable to but few locations, and even where most successful is gradually giving way to the more satisfactory use of resistant vines. Its chief use is to preserve vineyards which are already in bearing, and it may be of use temporarily in some locations in California. During submersion the vineyard must be covered continuously with at least 6 inches of water, as the object is to drown the insects—that is, to kill them by depriving them of air. If the surface becomes exposed even for a brief interval, air will be absorbed and the insects given a new lease of life. In very porous soils submersion is impracticable on account of the large amount of water required, and ineffective for the reason that the rapid passage of the water carries sufficient air into the soil to keep the insects alive. Submersion is most effective in destroying the insects when they are in their most active condition—that is, in summer. At this time, unfortunately, the vine is most sensitive to injury. The most favorable time, then, for submersion is as soon as the vines have ceased active growth and before the phylloxera have entered their hibernating or dormant condition. This in most parts of California will be some time in October. At this period the flooding need last but a week or ten days; a month later, two or three weeks, while during the remainder of the winter little good results unless the submersion is prolonged for thirty-five or forty days, and, indeed, in some soils of the extreme south of France two months has been found necessary. As the insect is most susceptible in midsummer, it was at one time thought that a copious irrigation at that time sufficient to destroy most of the insects without injuring the vines could be effected. At present a flooding in July for not exceeding forty-eight hours is practiced in a few places, but only to supplement winter flooding or the injection of carbon bisulphide. The insecticidal value of the short submersion which the vines will withstand at this time seems to be very slight. Its main value seems to be in promoting a vigorous growth of new rootlets to replace those that have been injured.

Planting in Sand.—Though no thoroughly satisfactory explanation has been given, the fact is established that in certain very sandy soils vines are uninjured by phylloxera. All sandy soils are unfavorable to the increase of the insect, and vines planted in them die more slowly than in others; but for complete immunity the soil must contain at least 60% of siliceous sand. The looser and more fine-grained the sand, the more resistance it offers to the insect. Calcareous sands, those containing notable quantities of clay—all those, in fact, which have a tendency to forms in lumps or "cake"—offer less resistance.

Grape Leaf Beetles.

Alexander Craw, quarantine officer and entomologist of the California State Board of Horticulture, has published the following:

I received specimens of this destructive beetle in May last from Horticultural Commissioner William H. Robinson of Stockton; also grape leaves showing the result of their work, an illustration of which is herewith appended. I afterwards received specimens from other grape growing districts, which prove it to be widely distributed.

They are nearly ¼ inch in length. Some specimens are black, others reddish brown. The base of the antennæ and the tibia are reddish. They attack the leaf, cutting long, narrow slits, and where very numerous will kill young vines, unless checked in their depredations. As soon as they make their appearance in the spring the vines, if not in bearing, should be thoroughly sprayed with Paris green, one pound to 200 gallons of water. Moisten the Paris green with a little water, and when placed in the tank keep it constantly stirred while spraying. They drop as soon as disturbed, and can be captured upon bearing vines by spreading a sheet under them and shaking them off, when they can be destroyed by burning in a portable fire. This work should be done in the morning, when they are sluggish.

THE DAIRY.

Patrons Charge for Creamery Butter.

To the Editor:—I submit for your kind consideration my creamery statement for a few days in March, and ask you if you will tell the actual cost of the butter purchased by me of the creamery for home use?

Number of pounds milk for the month of March		1,692
Average oil test		2.2
Number of pounds butter to the 100 pounds milk		3.55
Total pounds butter		60.06
Price per pound, @ 16c	$9 71	
Making, @ 3½c	2 10	$7 61
Butter for home use, 7 lbs., @ 16c.		1 12
Check to balance		$6 49

It seems to me I paid 19½ cents, but the creamery gentlemen say it was 16 cents. If so, who paid for its manufacture? My milk made 60.06 pounds of butter; they charged 3½ cents for making the entire product into butter; then I purchased seven pounds at 16 cents, and I think 3½ cents should be added to it in order to ascertain the exact cost. It is the intention of the creamery to charge us 16 cents—the same as we receive in the open market, which nets us 12½ cents—and, in order to do so, I think 12½ cents should be the price, which, with the cost of manufacture (3½ cents) would make 16 cents. The creamery people desire to correct the error, if there be one, and they, as well as myself, desire your opinion.

Sacramento County.

The creamery manager is right. The 16 cents per pound is the total cost of the butter to you. It is not butter at all until that 3½ cents expenditure is made upon it. If you wish to save that cost, you must spread the cream on your bread and not buy any butter. If the creamery man should sell you fat in butter form at the value of butter fat still in the cream, he would give you butter, not at cost, but just as much below cost as the outlay has been to give it the form you desire. The net butter fat to you and the actual cost of raw material to him is 12½ cents. The cost of making must be added, so the 16 cents is the total cost to you.

Exportation of Siberian Butter.

Russian papers state that the Secretary of the Treasury of Russia has entered into a contract with a commercial house at Riga to establish a direct line of steamers between that city and London, for the purpose of exporting those agricultural products of Russia which are easily spoiled en route. The Riga firm has had refrigerator steamers built, and weekly trips will be inaugurated in the near future.

Fast freight trains will leave the station at Ob, on the Siberian Railroad, for the shipment of butter. Each train will consist of twenty-five special cars with refrigerating equipments, containing about eight tons of butter per car. The route is by way of Kainsk, Tatarskaja, Omsk, Petropaulowsk, Kurgan, Chelyabinsk, Batraki, Rusajewka, Moscow and Bologoge to Riga, where the train will arrive every third Thursday. As soon as the line between Moscow and Kreuzburg is completed, this route will be taken, the distance being shorter.

For these special trains the railroads have had 138 refrigerator cars built. Ice will be supplied at the various stations of the Siberian and other railroads.

After arriving at Riga the butter will be inspected, and, if necessary, repacked for steamer transportation. This fast freight train will also transport other articles, provided they do not interfere with the shipments of butter. In this manner 35,000 barrels of butter will be exported during the summer, each barrel containing from 130 to 150 pounds.

Richard Guenther,
Frankfort, April 27, 1901. Consul-General.

Here is a factor which may have to be counted in in our ambition to do the dairy business for the new Orient. If the Russians can send so much butter westward to London, why can they not send much also eastward to her new railway terminals in the north of China?

Household Tests for Detection of Oleomargarine.

The U. S. Department of Agriculture has in press and will soon issue Farmers' Bulletin No. 131, entitled "Household Tests for the Detection of Oleomargarine and Renovated Butter." It was prepared by G. E. Patrick, Assistant in the Division of Chemistry. The bulletin describes the method of making renovated, or "process" butter, and refers to the usual methods for distinguishing genuine butter from renovated, and both from oleomargarine.

Two household tests are given—the boiling test and the Waterhouse test. The former has been in use for about ten years, and was originally used only for the detection of oleomargarine, but after the advent of renovated butter the test was found to serve almost equally well in distinguishing this product from genuine butter, although not from oleomargarine.

It may be conducted in the kitchen as follows: Take a piece of the sample about the size of a chestnut, put it in an ordinary tablespoon and hold it over the flame of a kerosene lamp, turned low, with chimney off. Hasten the process of melting by stirring with a splinter of wood; then increase the heat and bring it to as brisk a boil as possible. After the boiling has begun, stir the contents of the spoon thoroughly, not neglecting the outer edges, two or three times at intervals during the boiling—always shortly before the boiling ceases. A gas flame, if available, can be more conveniently used.

Oleomargarine and renovated butter boil noisily, sputtering (more or less) like a mixture of grease and water when boiled, and produce no foam, or but very little. Renovated butter usually produces a very small amount. Genuine butter boils usually with less noise and produces an abundance of foam. The difference in regard to foam is very marked as a rule.

The Waterhouse test, designed a year or so ago by C. H. Waterhouse, at that time dairy instructor at the New Hampshire College of Agriculture and Mechanic Arts, is as follows: Half fill a 100 cc. beaker with sweet milk; heat nearly to boiling and add from five to ten grams of butter or oleomargarine. Stir with a small rod, which is preferably of wood and about the size of a match, until the fat is melted. The beaker is then placed in cold water and the milk stirred until the temperature falls sufficiently for the fat to congeal. At this point the

fat, if oleomargarine, can easily be collected together in one lump by means of the rod, while if butter, it will granulate and not be so collected. The distinction is very marked. The stirring is not, of necessity, continuous during the cooling, but it should be stirred as the fat is solidifying and for a short time before. The milk should be well mixed before being turned into the beaker, as otherwise cream may be turned from the top and contain so much butter fat that the test is vitiated for oleomargarine.

The test, in a slightly modified form adapted to household conditions, has been quite carefully studied in the chemical laboratory of the Department of Agriculture, where, under certain specified conditions, it has given satisfactory results in a large number of trials in distinguishing oleomargarine from both renovated and genuine butter. These conditions are essential, since under other conditions renovated butter might be mistaken for oleomargarine. The bulletin contains detailed directions for conducting the test.

When to Cut Alfalfa.

H. M. Cottrell of the Kansas Experiment Station concludes that alfalfa should be cut when not more than one-tenth of the plants have come in bloom. Cut at this early stage, the yield of hay for the season will be much greater than if the alfalfa is cut near maturity, and every pound of hay secured will be worth more for feed.

At the Kansas Experiment Station a strip through a field of alfalfa was cut when one-tenth was in bloom and another strip was cut after full bloom had past. The strip cut early was nearly ready to cut the second time when that cut after full bloom was being harvested the first time. The strip cut early grew vigorously through the season and made three cuttings and a good aftermath. The strip cut after full bloom gave a low yield the first cutting and did not grow sufficiently to yield a good second cutting. Early cuttings seem to invigorate the plant.

The late cutting of the first crop seems to injure the plant more than at any other time, and we have found it profitable to cut alfalfa the first time as soon as one-tenth was in bloom, even though the weather was bad and we knew that the crop would spoil in curing. The increased yield from succeeding cuttings over that cut late much more than makes up for the loss of the first crop.

Successful clover growers, the first time they try alfalfa, often ruin the stand, so that it has to be plowed up, by waiting to cut until it reaches the stage at which clover is usually cut.

The great value of alfalfa is the large amount of protein it contains—that material in feed that is absolutely necessary for the formation of blood, lean meat and milk. The higher the protein in alfalfa, the more valuable the crop. The Chemical Department of this station found the effect of cutting alfalfa at different stages as follows:

	Protein.
One-tenth in bloom	18.5%
One-half in bloom	17.2%
In full bloom	14.4%

The Colorado Experiment Station found the effect of cutting alfalfa as follows:

	Protein.
Coming in bloom	18.5%
Half in bloom	14.6%
In full bloom	12.9%

The Utah Experiment Station for five years cut alfalfa at different stages of maturity and fed the crop in producing beef. The average production per year per acre was as follows:

	Hay, tons.	Beef, lbs.
In first bloom	5.35	706
In full bloom	4.90	562
Half blooms fallen	4.55	490

These experiments made in three States—Kansas, Colorado and Utah—prove that alfalfa cut in the first bloom will give the greatest yield and feeding value. The leaves of alfalfa contain more than three times as much protein as the stems, a ton of alfalfa leaves containing as much protein as 2800 pounds of bran. Every care should be taken in curing alfalfa to save the leaves.

Special Dairy Course.

The University of California proposes to offer a special dairy course during the fall of 1901, beginning early in October and continuing for eight or ten weeks. The course will be especially designed for persons who wish to prepare themselves to manage and operate creameries, skimming stations, cheese factories, and such ranch dairies as use modern dairy machinery. The instruction given will consist of practical work in operating dairy machinery, in butter and cheese making and in testing milk for fat and adulterations. Lectures and recitations will also be given on milk and its various products, breeds of dairy cattle and principles of breeding animals, feeding animals, dairy chemistry, dairy bacteriology, and veterinary science. An announcement giving detailed information in regard to the Dairy School will be issued about August 1st. This announcement will be mailed free to all requesting it upon addressing the College of Agriculture, Berkeley, California.

HORTICULTURE.

The Continuance of the Prune Association.

At their meeting in San Jose, on June 8th, the stockholders of the California Cured Fruit Association decided to continue business at the old stand and with the old force of employes.

The election resulted in the choice of the following: Directors—H. G. Bond, Santa Clara, 1229 votes; H. W. Meek, San Lorenzo, 1330 votes; L. F. Graham, San Jose, 1170; W. P. Cragin, Campbell, 868; F. N. Woods, Cupertino, 1244; A. B. Fletcher, Campbell, 1083; J. O. Hayes, San Jose, 1263; J. B. De Jarnett, Colusa, 1297; Charles Foreman, Los Angeles, 1246; Thomas Jacob, Visalia, 1295; W. E. Woolsey, Fulton, 1223.

The Board re-elected the old officers: President Bond, Vice-President Meek, Treasurer Woods and Secretary Barstow.

There was a conference on the plans and policy for the year, and President Bond was appointed a committee of one to meet the packers and take up and settle the matter of the modification of the contract.

The Executive Committee adopted a resolution renouncing their salary of $300 a month and making their pay $10 a day for each day of actual session. This is the same pay drawn by the other members of the Board and is in accordance with the wish of the majority of members who voted in favor of such an amendment to the by-laws. This action was ratified by the entire Board. While the by-law was defeated for lack of the necessary two-thirds vote, it thus becomes effective. The members of the Executive Committee are H. W. Meek, L. F. Graham and F. N. Woods. All were re-appointed.

Inspector Gilman resigned his position and will enter the service of a private firm for the coming year because of an increase in salary. President Bond has not named a successor.

The President's Report.—President Bond submitted a long report of the operations of the year, of which the following is an outline:

It showed that there are under contract with the Association 54,472 acres, 32,256 acres being in Santa Clara valley, or 87% of the total acreage of the State. There are 3737 members of the Association, eighty-five packing-houses and five receiving stations. The inspector's department has cost $23,324.41, or 37½ cents per ton to date, and the total cost of insurance has been $13,621.40.

The president says a mistake was made in placing the basic price at 3 cents in view of the large crops of fruit that were harvested last year in this country and Europe. The receipts of fruit for the year in the various warehouses amounted to 124,924,102 pounds; total sales, 59,417,491 pounds, leaving on hand 65,506,611 pounds. The total receipts were $1,730,640.61.

The expenses of the Association were: Packers' charges as per contract, $252,457; insurance on prunes, $16,219; advertising, $41,196; taxes, $8640; transfer charges, $213; organization, $14,288; canvassed accounts, unadjusted, $2457; operating expenses, $79,653; payment for account of members, $1,189,662; members' fees, $1074; cash on hand, $124,576.

The president says the general result of the past year's work has proved that it is entirely practicable to do the business required to handle the entire crop of the State at one general office; that the system of keeping the books is both practical and economical; that prices have been better by one-half than they would have been had not the Association existed and that the amount already paid in dividends is equal to what the members would have received for their entire crop had the former ruinous system of general competition prevailed.

He holds that prices and sales have not been satisfactory on account of the conditions. He admits that mistakes have been made, but they were to have been expected. The basic price should have been 2½ or 2¾ and 3 cents. The fact that there was an unusually large crop at home and abroad and that members of the Association were helping to keep up the supply of the outside packers form some of the causes why the great bulk of the fruit has not been marketed.

The report contained an explanation of many things that hitherto had been hazy, and almost from the start he had almost the entire body of growers with him, and they remained so to the end of the day. The report was valuable, in that it contained information that would have been impossible to obtain without organization, and which will be almost invaluable for future information.

Some surprise was evident when the president announced that if continued in office another year it would be his policy to sustain the Association by competition and thus overcome all opposition, forcing outsiders to join the Association for their own protection; and yet there was almost unanimous approval of it. His new departure, also, of abrogating the present packers' contract was endorsed.

The Packers' Association.—The annual meeting of the California Packers' Company (the packers allied with the Association) met on June 8 with President Griffin in the chair. There was a full attendance. The annual reports of the president and of Secretary and Manager Hersey were presented and accepted. The directors of the California Cured Fruit Association were present, as has been stated, and a conference was had on matters of mutual interest.

The following were elected as directors: W. M. Griffin, R. W. Hersey, A. E. Castle, A. G. Freeman, C. B. Bills, F. S. Johnson and F. H. Holmes. The only change is the election of Mr. Bills in place of A. J. Haetman, who declined a re-election on account of press of other business.

In the afternoon the Board met and organized by the re-election of W. M. Griffith president and R. W. Hersey secretary and manager.

No statement could be secured about what took place at the annual meeting, though it was conceded that the contract with the Association and the policy of it were considered.

ARBORICULTURE.

Ornamental Trees and Shrubs.

By Donald Currie at the Chino Farmers' Institute.

Arboriculture is an important branch of agriculture and in our age receives more attention than in former times. The increase of wealth, the growing refinement of progressive civilization, enhanced by learning and inventive science, urge the masses to surround themselves with all the beauty which Nature so abundantly provides for the edification of our senses, as well as the exaltation of our ideas of all that is becoming and beautiful in our immediate surroundings. It is not our intention to teach the esthetic doctrine that physical phenomena alone can satisfy the spiritual cravings of our inner natures; but whom of us can snatch a brief holiday from the exigency of daily toil to spend a few hours, maybe, in the forest primeval or the shady canyons of the Sierra Nevadas and not return refreshed in body and mind by the soothing influences of Mother Nature.

California is blessed with a climate in which the majority of cultivatable plants will thrive. Australian, Japanese and South African trees thrive almost as well as in their own habitat, and some of them, indeed, if the ax is not used on them ere they come to maturity, just as well. Many varieties of the acacias, prized in less favored countries as greenhouse plants, grow here to reach their natural size.

A. Melonoxylon, A. Dealbata or silver wattle, is very ornamental. A. Decurrens, green or black wattle, is good for sidewalk or windbreak, and A. Mollissima is very ornamental and free flowering.

Of the blue gums, Eucalyptus robusta or swamp mahogany, E. Saligna or weeping gum, are good lawn trees. Of the cedars, the Himalayan cedrus deodara is a beautiful tree with bluish-green foliage. The atlas cedar, cedrus Atlantica, is of a more rigid habit. Both are desirable for lawn decoration. Of the Japan cedars, cryptomerias, with a glaucous green foliage, are extremely beautiful trees. Of cupressus, Govens cypress and the blue cypress from the Guadalupe islands do well in this locality and are well worthy a place in every collection. The empress tree, "Paulonia imperalis," if properly grown when young will make an excellent shade tree and is a very rapid grower, with flowers of violet shade and trumpet shaped.

For a sidewalk tree none is more elegant than the camphor tree. It should be grown on one stem and kept trimmed to a proper height, so as to form an unbrella-like head. In a few years it will develop into a soft-tinted, graceful specimen that will greatly add to the attractiveness of any dwelling place. Of the ornamental pines, Araucaria Bidwellii is a very majestic tree of symmetrical and pyramidal shape, with spiny, glossy foliage; and the Norfolk island pine, A. Excelsa, is unsurpassed in beauty and gracefulness. The Chilian pine, A. Imbricata, is very desirable, both for its symmetry and hardiness. The Australian flame tree, with large shining palm-like leaves and coral-red flowers, stands the drouth well and makes a splendid shade.

Of American varieties, Tillia Americana or American linden is a handsome tree, and Juniperus Bermudina is easily grown and has a very striking appearance. The Irish juniper is a tree erect in habit and of moderate size, and looks extremely well as a single specimen where a tree of compact habit is required. The Japan juniper of bluish foliage is also a compact tree, suited for similar purposes. The carob tree, or Saint John's bread, stands the drouth well and grows to a fair size in this locality. Of the ficuses, the Moreton bay ficus is the most suitable for this locality and gives good satisfaction.

Of shrubs, suitable for the decoration of either parks or private places, there are a large number available: forthesias, deutzias, hibiscuses, hydrangea, fancy privets, magnolias, pittosporums, spireas, wigelias and many others of hardier nature, such as myrtles, berberies, unonymus or spindle tree, calycanthus; many varieties of yuccas, palms and dracænas should be placed in suitable situations to enhance and diversify the attractiveness of the arboretum.

Agricultural Review.

BUTTE.

BLACK GNATS WORRY FARMERS.—Chico Record: During the past few days the black gnats have made life miserable for the residents of eastern Glenn county. Minute as they are, they are a most persistent, annoying little pest of the plains. In the hay fields the men adopt various methods of battling with the little fellows, the most popular method being that of wearing a veil. No man enters a hay field without having first prepared himself for the attack of the gnats. He puts a veil over his hat and gloves on his hands, providing he has been able to get these equipments. Otherwise he smears axle grease, lard or bacon grease over his head, neck and hands, and carries with him a supply for renewing the coating. Under such treatment he manages to get through the day.

RAN AGAINST A SWARM OF BEES.—Red Bluff People's Cause: Richard White and his wife, who live on Elder creek near George Eaton's place, were driving along the road a few days ago, and Mr. White saw a swarm of bees coming towards him. In an instant the bees had settled down on the head of one of his horses. He stopped his wagon and was in a quandary what to do. The team, however, was gentle and the horse did not attempt to run. Finally he began to rake the bees off the horse, using a piece of wood for the purpose. The animal threw his nose up into the air and they were easily raked down, but many of them stung the poor horse before he got rid of them.

CATTLE THIEVES KILL STOCK FOR HIDES. — Willows Promoter: Superintendent J. D. Murphy of the Phelan ranch, near Chico, while showing some of the stock to a cattle buyer from San Francisco, discovered in the brush near the river the remains of a fine fat steer. The parties had taken what they wanted for use, also the hide. This made Mr. Murphy continue his search and he succeeded in finding evidence to convince him that quite a number of his fine fat cattle had been killed, and in each instance the hides had been carried away.

COLUSA.

FIRST LOAD OF BARLEY. — Colusa Herald: Frank Yates last Wednesday brought into Colusa the first load of new barley of the season. The grain ran 103 pounds to the sack, and the sacks were not well filled. It will run 108 pounds to the sack. Mr. Yates has ninety acres of this class.

GROWING RYE. — Colusa Sun: Fred Farnsworth has a patch of rye growing and he has fed it down—tramped it down; when the April rains came it looked past all chances for growing again, but he gave it a little chance and now he has a good, big crop—he thinks as much as fifteen sacks to the acre. It has been a very profitable crop to him. He tells us he is going to plant it on a little low and thin land he has, and see what it will do there. We know what it will do. It will grow better on our alkali land than any other grain, and, if it is fed down, any land can soon be reclaimed from alkali, and the reclamation be made one of the most profitable acts of farming.

GLENN.

GLENN RANCH BEING CUT UP.—Colusa Sun: Andrew Hopkins of Grand Island has purchased 120 acres of the Glenn ranch, paying for it $4800. Mr. Hopkins is one of the most conservative of the farmers of Colusa county, and his judgment on the value of land is second to that of no man in the Sacramento valley. There have been other sales, denoting that the whole ranch will very soon find purchasers in small subdivisions.

KERN.

FIRST WHEAT OF THE SEASON.—Bakersfield Californian, June 6: For several years Kern county has been first in the market with early wheat and this year is no exception to the rule. The first wheat of the season in this State, two carloads, has just been purchased by the Kern County Land Company for the Kern River mills and has already been delivered. One car came from A. J. Fowler and was shipped from Pampa, and the other was consigned by J. M. and O. B. Kimberlin from Fomosa. The Fowler wheat was grown at the Rock Pile, about 17 miles from Bakersfield, up against the mountains, and is of fair quality considering the dry season. The second car was grown near Kimberlina, a section that has become famous for its early wheat, Messrs. Kimberlin having for several years been first in the market with the season's grain.

RIVERSIDE.

BEETS AT HEMET.—Hemet News: The sugar beets that were planted in October are now nearly twelve inches in circumference. One was taken this week, weighed and sent to the factory at Chino. Its weight was a little more than two pounds. The beets show signs of ripening. Fruit, grain and hay ripen earlier in the interior than they do on the coast. The same should happen with sugar beets. In this latter event, sugar beet culture has another advantage at Hemet. If the beets planted on the Hemet tract last October were dug up now, the yield would be at the rate of more than twenty tons to the acre. Evidence continues to accumulate that Hemet will become a fine sugar beet section. Irrigation is a necessary condition. Another important consideration is that the plant does not seem to be injured by frost. Early in April the wheat in the low lands of the San Jacinto valley was injured in that way, while sugar beets sown in October were not affected, and those planted at Ethanac in February were uninjured by frost.

ENCOURAGING PROSPECTS. — Riverside Press, June 7: Crop prospects from all over Riverside county, on the whole, are of a most encouraging character. It is too early to make an accurate forecast on the orange crop, but the present outlook is excellent. The only real failure is on the apricot crop. Indio and Hemet are the only two points where a good showing is made on that fruit. Peaches, pears and grapes promise a heavy crop. The hay and grain crop is uneven, but is certainly the best in many years. When two and two and a half tons of hay are cut to the acre, as some localities report, that is certainly very fair. The farmers of Riverside county seem to have in sight one of the most prosperous years since the county was formed.

SAN BERNARDINO.

IMMENSE OUTPUT OF CHERRIES.—San Bernardino Sun: A thousand pounds of cherries are being picked daily from the orchards at Yucaipe, and this output would be increased could more boys, men or women be secured to do the picking There was a time when people living near in this part of the State believed that the only good cherries to be found at the fruit markets were those shipped from San Jose or Alameda county. This idea has now undergone a change, as the cherries grown in Yucaipe valley, 20 miles east of this city, are said to be superior to the northern fruit in size, flavor and coloring. Protected as Yucaipe is by the surrounding mountains from frosts and winds, the orchardists are able to produce a fruit which is of the richest coloring and extremely palatable to the taste. A trouble experienced by the owners of southern California cherry orchards is the birds that come in great flocks with the picking season, or a little before, and which threaten to destroy the entire crop. Indeed, it is surprising to know the amount of cherries that a single bird can mutilate in one day. Especially is this so just before the fruit fully ripens, as the birds simply peck at the ripe side of the cherry, after which it hops to another, and each peck, however small, destroys the fruit for commercial use.

SANTA BARBARA.

MUSTARD CROP LESS PROMISING.—Lompoc Record, June 8: The yellow mustard has taken up the moisture so fast on moist soils as to show signs of not maturing so well as was believed possible three weeks ago. Many will be disappointed in the yield anticipated. Crops that were placed at fifteen bags per acre will fall off one-third to one-half, while some will fall below these figures. There has also been an overestimate in the yield of red mustard, although that variety is holding up better than the yellow by far, because it was further advanced when the rain came the last of April, many crops being out of bloom, while most of the yellow had its principal growth of stalk yet to make before blooming, which has absorbed most of the moisture. The crop of mustard will fall many thousand bags short of the most conservative estimates of the yield of both varieties. While the red variety is well beyond the danger line from heat, the yellow, much of it, is just where two or three days of wind and hot weather would do it a great damage and cut short the yield perceptibly. Those who have calculated on such a large output will find their estimates falling by more than one-third. If the price can be kept up to 3½ cents per pound, as now seems probable, the farmer will be satisfied; anything below this price will yield less than cost of production to many.

SANTA CLARA.

FINE WHEAT CROP.—Gilroy Gazette, June 7: Within four miles of Gilroy, on the beautifully located San Martin ranch, is one of the finest lots of growing wheat ever seen in the valley. There are 2000 acres of this grain, and the sight is both impressive and cheering, demonstrating the productive value of good land when favored by an adequate rainfall. The average height of the grain is 5 feet 6 inches, and in some places it rises to a height that hides from view a person standing in its midst. The stalks have fully headed out, and it is estimated that the yield will average seventeen sacks to the acre.

SUIT OVER PRUNE TREES.—Mercury, June 6: The suit of L. P. Brackett against S. Martens for $5000 was given a hearing before Judge Rhodes in Department 3 of the Superior Court yesterday. Brackett is a prominent farmer residing north of this city on the Alviso road, and Martens is a nurseryman in the same vicinity. A few years ago Brackett purchased 1000 young French prune trees from Martens and planted them on his ranch. When about four years old, it is alleged, all the trees died and Brackett was out labor and all expenses. Brackett then filed a suit against Martens for $5000, alleging as a cause for action that the trees had not been budded as represented by the defendant.

CANNERIES SLOW TO OPEN. — San Jose Herald, June 8: The tardiness of the fruit season is becoming a serious problem to the canners. A year ago almost every cannery in the county was running a large force at this time. This season operations have not begun, except in a limited way, and the indications are that at least two weeks will elapse before any work of any extent is attempted. In a desultory manner all the canneries have put up some fruit already. The Ainsley cannery at Campbell is working with a limited force and expects to increase it the coming week. The Flickinger and the Golden Gate Packing Co. institutions are the only exceptions. Neither has as yet formally "opened the season," although in both some work has been done. The Golden Gate Packing Co. announced last week that they would begin operations on Monday and nearly 200 women put in an appearance. The fruit on hand only justified the turning of the machinery for two hours. There will be no dearth of help. All the canners say they have had more applications for employment than they can possibly consider.

GOOD OUTLOOK FOR WINE GRAPE INDUSTRY.—Gilroy Gazette, June 7: Choice wine grapes are said to be worth this season $25 a ton, and we understand that in San Francisco dealers are offering to make contracts, covering a term of years, to pay $20 a ton for all wine grapes that may be produced. The reason for this is that the phylloxera is destroying 15,000 acres of vines each year. As it is impossible to check its ravages, shrewd growers are planting vineyards of resistant vines, and by the time they come into bearing the production throughout the State will have become so limited that the output of the new vineyards will likely command prices that will net good profits. A party of San Jose bankers and business men have selected a portion of the San Martin ranch with the intention of planting the same to resistant vines this coming fall.

SANTA CRUZ.

BIG ORDER FOR LADYBUGS.—Watsonville Pajaronian, June 6: The Orchardists' Association had a well-attended meeting at the Board of Trade rooms last Saturday afternoon. Horticultural Commissioner C. H. Rodgers gave an instructive talk on the habits and work of the "ladybug," and showed a number of these beneficial insects in different stages of development and also at work. The ladybug loves to feed on the woolly aphis, and Pajaro valley apple orchards have quite a supply of this character of food ready for ravenous ladybugs. This friend of the orchardist does not take kindly to the central seotion of this valley. Probably it prefers a "warmer clime." It is at home in the Pajaro foothiils, and in the Green Valley section is very abundant some years. Mr. Rodgers suggested that these foes of the woolly aphis be brought here during the summer from the Chualar district, where they are usually found in large swarms and where they can be gathered at little expense. His suggestion was adopted, and orders for 100,000 ladybugs were placed. The woolly aphis is going to have a lively year in Pajaro valley.

SAN LUIS OBISPO.

BIG GRAIN CROP.—San Luis Obispo Tribune, June 7: The yield of grain at Cayucos promises to exceed earlier expectations, and some individuals predict a yield surpassing the phenomenal crop of 1899, when 100,000 sacks were shipped over the Cayucos wharf. The quality of the grain is said to be excellent, and the crop of hay large and of superior quality. The demand for ranch and dairy hands is so great that it is feared a scarcity of harvest help will be experienced when the rush of grain gathering begins.

STANISLAUS.

CREAMERY RECEIPTS OF MILK DOUBLED.—Modesto Herald, June 6: The Modesto creamery business for May was double that of April, the opening month. The skimming station handled 97,484 pounds and the main station 30,192 pounds of milk, the latter also converting 3000 pounds of cream from the Bald Eagle ranch. From 225 pounds to 250 pounds of butter were made daily. The butter finds ready sale at home and abroad. San Francisco commission men rate it A1.

MUCH GRAIN BURNED.—Modesto Herald, June 6:—The season's grain fires entered with a rush this week, entailing heavy losses. On Sunday a blaze charged to a Sierra Railway locomotive destroyed 160 acres of wheat and 40 acres of barley, the property of Mrs. Fogarty, near Occidental station; 25 acres of wheat, the property of Robert Benson, and 40 or 50 acres of wheat and 25 tons of hay in the stack, belonging to D. O'Meara. A large area of pasturage was also consumed. Jonn Clark, near Oakdale, lost 60 acres of wheat by fire on Monday; insured for ten sacks to the acre. On the same day, in the hills 8 miles southwest of Los Banos, a fire swept over a section of grain and twenty-five sections of pasture. A blaze Tuesday afternoon cost Fred Bartch of Westley about 100 acres of summer-fallow wheat; insured. A. L. Yates lost 40 acres of wheat on Sunday. A fire in Wood & Williams' grain, 8 miles northeast of Waterford, last evening, consumed 20 acres of wheat, and 60 acres of wheat and a stack of hay on adjoining land farmed by H. Palmer. Both lots of wheat were insured.

SONOMA.

GREAT CROP OF BEETS.—Santa Rosa Press-Democrat: T. B. Burkett, superintendent of the big sugar beet ranch near Schellville, known as the Jones ranch, says he has 230 acres in beets and estimates that the crop will be from ten to twenty tons to the acre. At least, the company has engaged shipping capacity for a crop of ten tons to the acre.

SUTTER.

FIRST CARLOAD OF GREEN FRUIT.—Sutter County Farmer, June 17: The first carload of green fruit for this season was shipped from here this week, the fruit being gathered from the orchards in this vicinity. It consisted mostly of plums, apricots and peaches, and will be sold in the Eastern markets. If the market holds good and f. o. b. sales prevail, considerable green-fruit shipping will be done this seasсn.

TULARE.

SQUIRREL TAILS GALORE. — Visalia Delta, June 6: A. R. Cutler, clerk of the board of supervisors, received affidavits Saturday from the justice of the peace at White River certifying to claims for 32,000 squirrel tails. The White River country must be especially adapted to the squirrel family. Possibly each squirrel grows two tails. At the present bounty $960 will be required to pay for that batch.

FIRST PACKING OF FRESH PLUMS.—Visalia Delta, June 6: The Earl Fruit Co. began operations at its packing house in this city Tuesday. Quite a force of young ladies were set at work packing Clyman plums, Tragedys and Prunus Simonis for the first carload. This force will be augmented from day to day, and by next week business will be rushing.

VENTURA.

VENTURA COUNTY'S CROPS.—Nordhoff Ojai: There will be about 200,000 tons of sugar beets harvested in this section this year. There are now growing in the valley 14,000 acres of beets, which will, at fourteen tons to the acre, produce a crop of 196,000 tons. This is considered to be a very conservative estimate. It will be the largest ever raised here. It is estimated that the Lima bean yield will be over 500.000 sacks. About 300,000 sacks of this amount will be raised in the valley surrounding El Rio, Oxnard and Huenome. The Los Posas, Pleasant valley, Simi and the other side of the river will produce the remaining 200,000 sacks. Buyers are now contracting at $3 50 per cental. The grain yield is estimated at 350,000 bags, mostly barley and wheat. The yield will be the largest since 1897. The last rains were of great benefit.

YUBA.

CONDITION OF THE HOP CROP.—Wheatland Four Corners, June 8: The past week has not favored the hop yards. The north wind of the forepart of the week whipped the vines badly and the following hot weather is forcing the vines into the bearing period. If extremely hot weather prevails for the remainder of June we may look for a light hop crop; if warm growing weather prevails the crop will be large.

THE HOME CIRCLE.

The Heart of the Tree.

What does he plant who plants a tree?
He plants a friend of sun and sky;
He plants the flag of breezes free;
The shaft of beauty towering high;
He plants a home to heaven anigh
For song and mother croon of bird
In hushed and happy twilight heard—
The treble of heaven's harmony—
These things he plants who plants a tree.

What does he plant who plants a tree?
He plants cool shade and tender rain,
And seed and bud of days to be,
And years that fade and flush again;
He plants the glory of the plain;
He plants the forest's heritage;
The harvest of the coming age;
The joy that unborn eyes shall see—
These things he plants who plants a tree.

What does he plant who plants a tree?
He plants, in sap and leaf and wood,
In love of home and loyalty
And far-cast thought of civil good—
His blessing on the neighborhood
Who in the hollow of his hand
Holds all the growth of all our land—
A nation's growth from sea to sea
Stirs in his heart who plants a tree.

—The Century.

Cupid, M. D.

Scene—The waiting room at a medical specialist's.

Characters—The Major-General; the Widow.

(Enter the Major-General, C.)

General (speaking off)—Say Major-General, not General! Major-General! (Comes down.) Confound these fellows! I have to pay my tradesmen half as much again for being a major-general as I had when I was a colonel. There's a regular graduate tax in London for old soldiers. Colonel so much, major-general so much more. Confound 'em! And half of 'em don't know the difference between a general and a major-general, and want to charge me as if I were a field marshal. Thank the Lord I'm the only one here, except the victim in the torture chamber, so, perhaps, I shan't be kept waiting more than a couple of hours. Humph! Weekly papers! Illustrated papers! I used to read 'em when I was in India, but since I've retired and this confounded fellow has been tinkering at my liver I hate the sight of 'em. How can a man enjoy the papers at his club when they remind him of the doctor's waiting room? I'll enter a protest against the custom. (Collects the illustrated papers and sits on them.) Now, then, where's "The Lancet"? Something cheerful about sawing off other fellows' legs will suit me; a sort of a sherry and bitters before the feast that's to come. Here we are! (Voices heard without.) Lord love us, here's a woman! They're always rushing off to the doctor, though what on earth they ever have the matter with them that couldn't be cured with a bread pill, beats me. But I suppose the doctors must live.

(The Widow is shown in, C.)

Widow (sitting L.) what a nuisance. One of those horrid old retired generals, I suppose. Now I shall be kept waiting for hours while he dilates on his imaginary ailments. What can a rough, strong man have the matter with him? Liver of course! That's overeating and too many whiskey pegs. Men are so greedy! Well, I suppose I must resign myself to looking at the illustrated papers, as usual. Strange, I don't see any of them! I'm afraid to ring and ask the pompous butler; he might be reading them in the pantry. I'll ask the liverish old gentleman; perhaps he's seen them. (Coughs.) Ahem! I beg your pardon!

General—I beg yours, ma'am. (Aside.) Now, what does she want with me? A widow, evidently. No use trying it on an old dog-fox like me. Seen too much of 'em in India.

Widow—I'm sorry to interrupt you, but have you seen the illustrated papers?

General—No, ma'am, I haven't and I don't mean to. If you read 'em here, how can you enjoy 'em at the club?

Widow—But I haven't got a club, and I want to read them here, as I shall have hours to wait—(aside) thanks to you. (Looks about.) Why, he's sitting on them, the old wretch! But I'll have them out if I die for it. (Aloud.) I'm sorry to disturb you, but I think the papers are behind your chair.

General—Behind my chair? Confound the woman! Impossible, ma'am! Why, so they are!

Widow—Perhaps the butler put them there.

General—The butler! No, ma'am. No butler would dare to take such liberty. (Rises.)

Widow—Doctors' butlers are capable of doing anything. Thank you, if you will let me have them.

General (still holding them)—Madam, let me advise you. I have had plenty of experience. Don't look at these papers. I don't know what is the matter with you, whether you are going to be trepanned like a poor fellow I have been reading of in "The Lancet," or have a leg off or an eye out; but, whatever it is, don't read 'em. They will always bring back the remembrance; you will always feel as if your leg were coming off again; they will always taste of the surgery. I can hardly look at 'em now—they remind me of my liver. Take an old—middle-aged man's advice, and don't read 'em. Sit on 'em.

Widow (aside)—Oh, that's how they came on his chair! (Aloud.) But I'm not going to have anything out or off, and I need soothing. (Takes papers.) Thank you very much!

General—Well, if you will read 'em, of course you must. But I've warned you. (Sits.)

Widow (after a pause)—I'm sorry to interrupt you again, but your voice and manner seem strangely familiar to me.

General—No, ma'am, they're not! Impossible—quite impossible! I've been in India and the Soudan for thirty years, on and off. Impossible! (Aside.) Confound the woman!

Widow—Why impossible? I was born in India.

General—God bless my soul! Ah! but you had to leave it at a very early age. Children of your generation were always sent home to school. (Aside.) And a great relief!

Widow (aside)—My generation? What does he mean by my generation?

General—And I didn't go out until I joined the service.

Widow—Ah! then we must have arrived in India about the same time.

General—Yes, but not by the same route, ma'am.

Widow—But it was in England that I knew you. Don't you remember Wilsford, Captain—

General—Major-General, ma'am—Major-General retired! Yes, I do remember Wilsford, but ages ago—ages ago.

Widow—You were at home on sick leave, and we played croquet.

General—Croquet! I? Never! Croquet!

Widow—Indeed you did! And when I was croqueted into the bushes you used to help me out.

General—God bless my soul! Why, you're never little Mary?

Widow—Yes, I am—little Mary.

General—But you've grown.

Widow—People do grow in thirty years, General.

General—Major-General! So you are little Mary? Well, well! I've forgotten what your other name was.

Widow—It does not matter. I have changed it since those days.

General—You're married?

Widow—I have been.

General (aside)—I was right, then. I thought so. She is a widow.

Widow—And you are much older than you were?

General—Not a bit! All our family turn gray young. Thirty years ago, thirty years ago! Perhaps you're right. Why I must be getting a battered old thing. I've had fever and ague, sword wounds from the Afghans and bullet wounds from the Dervishes. I've got a slug about me now.

Widow (starting)—Good heavens! The horrid creature! How can you touch the horrid slimy thing? Don't let it loose, General!

General—Major-General! Is she mad? I wish I could get at it. A man doesn't carry a bullet in his body if he can get rid of it.

Widow—A bullet? I thought you said a slug!

General—So I did. They're the same thing, aren't they? She's mad!

Widow—I'm so glad it's only a bullet! I thought it was a slug, and I never could bear snakes; they get on my nerves so.

General (aside) Snakes? Get on her nerves? She's not mad. She's a dipsomaniac, and old Thingamajig is treating her for it. And little Mary has come to this! A dipsomaniac!

Widow—My nerves are so shattered!

General—They call it nerves, do they?

Widow—And the doctor is so clever with nerves.

General—I dare say. He tells you what to avoid?

Widow—Yes. One or two things.

General—Of course! (Aside.) Nips between meals. Well, she doesn't mind acknowledging it. But fancy little Mary ending as a dipsomaniac!

Widow—And you—are you also a patient?

General—Yes, but not for the same complaint.

Widow—No, of course not! Men never suffer from nerves.

General—Don't they? I've known one or two. But then, it's called by another name when men suffer from it.

Widow—Ah, I suppose so! It isn't your complaint?

General—Good Lord, no! I have a touch of liver.

Widow—Ah, you want to be taken care of! You ought to have married, General.

General—Major-General! Not I, ma'am. Bad thing to marry too young. Nothing ages a man so much.

Widow—But a lonely old man is a very sad thing, don't you think?

General—Perhaps, perhaps; but not so bad as a henpecked old man. A man should never marry until he's come to years of discretion. (Pause.) Do you know, I've a sort of recollection—weren't we—a—um—engaged in a sort of a kind of a way?

Widow—In the usual way, I believe. You surely hadn't forgotten that?

General—Of course not! But thirty years is a long time ago.

Widow—I believe you had forgotten little Mary!

General—But you married some one else. I couldn't be expected to remember a girl who married some one else. There are so many girls who do that.

Widow—But I didn't want to marry anybody else.

General—Now, if little Mary had only waited, who knows?

Widow—Little Marys can't wait forever.

General—They say patience is a virtue.

Widow—Yes, and virtue is it's own reward. A nice sort of a reward to be an old maid all one's days.

General—Well, well! You recommend marriage for my liver. What does the doctor recommend for your nerves?

Widow—Oh, the wretch! He has cut me off afternoon tea, which I love, and ordered me whiskey and soda, which I hate. He says tea has ruined my nerves.

General—Then she isn't a dipsomaniac, after all! (Aloud.) He does not recommend marriage to you, then?

Widow—No, not in so many words.

General—That's a pity! Well, I shall think over what you've said.

Widow—Yes, do!

General—Thirty years ago! I thought of marriage then, when I was only captain and could not afford it; and now that I am a major-general retired on half pay, I suppose marriage will not think of me. I had forgotten all about it until I met you.

Widow—It's never too late to mend, General.

General—Major-General! Well, I might mend even now, but only on one condition.

Widow—Really? What is that?

That you find me another little Mary.

Widow—I don't know. I'll see.

General—Instead of the one who could not wait.

Widow—Perhaps.

General—The little Mary of thirty years ago would not wait. But I have waited. Ask her if she will come back.

Widow—Oh, General!

General—Major-General!

Widow—She will; I'm sure she will—if you ask her.

General—Then I do ask her. Come, Mary! (They embrace.)

Widow—And what about the doctor?

General—We'll be our own doctors for the future.

Widow—And the butler; how shall we pass him?

General—I've got my fee here in paper. I'll slip it into his hand as we pass. That'll choke him off. Come, Mary, let us go before the patient is released and I am summoned. (Picking up hat and stick.)

Widow—But your liver?

General—Oh, I haven't time to think of that! And your nerves?

Widow—I've forgotten all about them.

General—Ah, Mary, we will forget the years that have passed! And that will be one of the greatest miracles ever wrought in Harley street.—Sketch.

Is Life Worth Living?

Is life wurth livin'? I dunno.
Maybe not, an' maybe so,
Haven't time, the truth to state,
Fur sech serious debate.
When the sun is kind an' warm
An' the sky is free from storm,
When the buds are lookin' out
At the grasses round about,
An' the wakenin' through the wood
Sort o' sets you feelin' good,
I jes' haven't got the time
For the solemn an' sublime.
Life wurth livin'? I dunno;
Maybe not, an' maybe so.
When the birds begin to sing
I can't stop fur figgering.

—Washington Star.

After the abandonment of Britain by the Romans, the roads fell into disuse, and bridle paths formed the only means of communication. Not until the sixteenth year of Charles II—that is, 1676—was any systematic effort made to improve the roads of England.

COLDS

The quickest relief, for a cold, is by Scott's emulsion of cod-liver oil.

We all have colds, you can try it and see. You will find the edge taken off in a night; and, in three or four days, you'll be wondering whether that cold amounted to anything anyhow.

That's relief. If you tackle it quick, the relief is quick and complete, if you wait till the cold is in full possession of head and lung, why, of course, the relief is quick if it comes in a week.

A little emulsion won't clear and restore your whole breathing-machine in a minute; don't be looking for miracles.

We'll send you a little to try, if you like.
SCOTT & BOWNE, 409 Pearl street, New York.

To Walk Correctly.

The American girl is learning how to walk. For many years she has been a martyr to the French high-heeled shoe, the toothpick toe and the wafer sole, but now common-sense footwear is the vogue. It took a long period of discomfort, if not actual suffering, to convince woman that she could wear a sensible shoe and not detract from her charms. Now that she has been convinced of the error of her ways, more interest is manifested in the correct style of walking and the proper manner of holding the skirt.

The proper style of walking is not only the most graceful, but the least fatiguing. Walking is simply the art of balancing. Naturally that system of balancing which will most evenly distribute the weight of the body is the correct one.

As long as fashion decreed that woman should wear a shoe that cramped her feet, threw all the weight of her body upon her toes, tipped her forward until all the strain was upon the muscles of the instep and curtailed functions of the tendons which nature intended should play a most important part in walking, woman was sure to follow fashion; but now that fashion has joined hands with nature and reason, femininity is finding a pleasure and a satisfaction in walking that were impossible under the former style.

No machinery made by man, no matter how delicate or accurate, can match in regularity or uniformity the action of the foot. Throughout the foot and leg the bones are so arranged with respect to each other that there does not exist a right angle at their joints. Thus is avoided the chance of violent concussion in sudden movement, as of jumping, striking the foot against a heavy object, and the like. A sinuous and slightly undulating line is maintained, and it is this line which gives the grace and elasticity of appearance so observedly beautiful in the woman who walks correctly.

In correct walking there is the poetry of motion, the delicacy of poise and the scientific adjustment of the weight of body which the ancients knew so well, but which the moderns slur, if they do not absolutely ignore. It is because of this laxity on the part of the latter-day people that artists find in antique statues the best models. The ancients considered that every portion of the human form was beautiful, and that in the proper development of every portion of the human body the highest type of the noblest work of the Great Architect was obtained.

To-day there should, if nature's teachings had been observed, be but one style of walking. That would be the correct one. Instead there are hundreds.

The girl who walks correctly is a joy to herself and to all who behold her. She has some purpose in life. She is nine times out of ten neatly dressed, bright-eyed and healthy. Watch her and you will see that the ball of the foot is the center upon which the weight of the body swings, and that upon the heel and the toes there is an even balance of the strain—if such it may be called—the heel not being called upon to do more than the toes nor the toes more than the heel, while the sole is the medium between the two extremes.

In correct walking the foot is placed evenly upon the surface, with the pressure first upon the heel, then upon the ball of the foot, and then upon the toes. From the ball of the foot and the toes the impetus and elasticity of the stride originate.

Many persons, in endeavoring to walk correctly, make the mistake of putting too much weight upon the heel. This is not as bad as putting too much weight upon the toes. The easiest method of learning how to walk correctly is to pattern after the person who knows how to walk.

No girl who walks properly is ungraceful. No girl who walks improperly can be graceful for any long time. The charm of accurate poise of the body, of graceful movement of the limbs, and of the bringing into play of all the portions of the human structure intended by nature to be used in walking, make in themselves strong attractions, not only to the intelligent observer, but to the less cultured, for no one is so dull of comprehension as to be unable to appreciate what is beautiful and a delight to the eye.

To walk correctly is to tell the world you are of good habits and refined. The girl who walks correctly also wears neat shoes. Usually she is delightfully dressed. Rich garments do not mean to be well dressed. Daintiness in dress is as delightful and often more delightful than rich materials.—Washington Post.

The Key to Beauty.

Perfect health is the key to beauty. Many a girl whose complexion might be clear and tinted, if she would give it a chance, goes through life with a thick muddy complexion because she insists on sleeping with her windows shut and breathes bad air for at least half the night. There should never be a light during the night, unless in case of sickness. A light promotes crow's feet; and if it is a gas light, it takes the freshness out of the air.

The majority of people wear too much clothing. The thick layers of clothing prevent the air from reaching the body and prevent the body from throwing off the waste matter.

The bath is a valuable aid to the necessary purity; but, like all other things, it is liable to abuse. A warm bath is seldom injurious, but the safest is a tepid or a quite cold one. Only a short time should be allowed for the bath, but the drying should be vigorous and thorough. After a bath in cold water, an hour's walk is very beneficial if the clothing is good and warm.

When very tired, sponge the face with warm water, making a lather of some good soap with a few drops of glycerine. Rinse the lather and dry the skin with oatmeal. Wash the meal off with clean, warm water, and spray the face with cold water until the skin is firm.

The face is the most exposed part of the body, and therefore gets more soil and dust than any other part of the body; consequently it needs more washing. In winter the water should not be cold, and soap should be used but once a day, and particular attention should be devoted to the corners.

Great care should be taken in the drying, and the stroke should be made upward. The face should be thoroughly massaged while the skin is soft and moist.

If women knew how fearfully destructive face powder is to the skin they would let perfect cleanliness and plenty of good refreshing sleep do the work. Fatigue makes even a young woman have a drawn and tired look, which ages it, and rest only can remove this.

Diet has a great effect upon the complexion. Simple food is the best. Most of us eat too much meat and not enough vegetables and fruit.

Perfect health is better than any face wash that can be produced. A cosmetic may whiten the face for a time, but it cannot clean the complexion nor make a lasting impression.—Cleveland Plain Dealer.

Well Worth Knowing.

We had an accident happen at our house a short time ago which I think well worth telling. Our little boy, aged two and one-half years, put a Damson plum seed up his nose, and in trying to get it out had pushed it so far up the nostril that only the tip of the seed could be seen. After trying different ways to extract it, and only succeeding in pushing it farther up, we took him to the doctor, who merely put one finger on the opposite nostril to close it and blew in his mouth; the seed dropped out on his lip. We were more than willing to pay the fifty cents charged for the knowledge of this simple remedy, and it may be worth just as much to many parents, who, like us, live many miles from a doctor. —Farmers' Voice.

Flowers.

'Tis, and ever was my wish and way
To let all flowers live freely, and all die
(Whene'er their Genius bids their souls depart)
Among their kindred in their native place.
I never pluck the rose, the violet's head
Hath shaken with my breath upon its bank
And not reproached it, the ever-sacred cup
Of the pure lily hath between my hands
Felt safe, unsoil'd, nor lost one grain of gold. —Walter Savage Landor.

To Clean a Lamp Chimney.

Lamps are a necessity in many country homes, and to get the most out of a lamp you not only have to keep the oil well properly supplied, the wick in prime condition, the various parts of the lamp itself perfectly clean, but the chimney must be clean, too. There are for sale in some hardware stores regular chimney cleaners, but many say that they cannot obtain them. Well, a good substitute for these chimney cleaners is a narrow stick about twelve inches long, with a small sponge carefully and securely attached to one end. Lamp chimneys should be washed by themselves in good hot suds made with washing powder. Immerse the sponge and stick into the suds and clean the chimney by turning the stick repeatedly until it is perfectly clean. Rinse the chimney in clear warm water, and dry it with a soft, clean cloth; polish it brightly with tissue paper. It is not beneath the dignity of any housewife personally to attend to her lamps each day. Only by such attention can the best results be gotten from a lamp. Fill the lamps every day and wipe off with a small cloth the top of each wick. Keep the various parts of the lamp absolutely clean by an occasional boiling, and keep the chimneys clean, and you will have a clean, brilliant light night after night.

Humorous.

Blobbs—Do you believe in hero worship? Slobbs—I would if I were a hero.

"Do you think women dress to please the men?" asked the bachelor. "No; to worry them," snapped the married man.

Nell—The paper says she swept up the aisle on her father's arm. Belle—Well, that's the first time in her life she ever swept up anything.

Lawyer—"As your husband died intestate you will, of course, get a third." Widow—"Oh, I hope to get my fourth. He was my third, you know."

First Office Boy—I've got sixteen aunts, two grandmothers an' a great-grandmother. Second Office Boy—Gee! W'ot a lot of ball games you oughter see dis summer.

Mr. Frend—I suppose you've already picked out a profession for your precious baby. Mr. Newpop—O! he has proved himself fit for a calling already, sure enough.

"What are your views on the financial question?" asked the old man, genially. "Oh, the money of the fathers is good enough for me," incautiously answered the prospective son-in-law.

Hoax—Carben is getting pretty stout, isn't he? Joax—Yes; and he's worried sick because he says he doesn't know of any way to reduce his weight. Hoax—Why doesn't he use his own scales? He's still in the coal business, isn't he?

"What's the matter, old man?" inquired Peck; "you look blue." "I guess I do," replied Speck; "I sold short, waiting for a fall." "And the fall didn't come?" "Oh! I got the fall, good and hard."

Mr. Newcome—So you're glad your sister's got me for her steady company, eh? Johnny—Yep. Tommy Brown's sister's got steady company, an' Tommy works him for candy an' things to beat the band.

She—You say girls are always in a hurry to get married. He—Yes; that's precisely what I say. "And yet you claim they are always late when it comes to the wedding."

DOMESTIC ECONOMY.

Domestic Hints.

Cream Drops.—One cupful of milk, two cupfuls of flour, two heaping teaspoonfuls of baking powder, one egg, one tablespoonful of melted butter, and a pinch of salt. Beat well together, and bake in buttered patty pans in a quick oven.

Sausages and Fried Apples.—Prick the sausages if in links, slice one-half inch thick if in bags. Bake in hot oven till brown and cooked through. Core tart apples and cut across the center in half-inch rings. Cook in sausage fat till soft and slightly brown.

Tomato Sauce.—Stew half a can of tomatoes with one teaspoon mixed whole spice. Cook one tablespoon onion in one tablespoon of butter till yellow; add one level tablespoon of cornstarch, and stir into the tomato. Cook until it thickens, and strain it before serving. Part water, milk or stock may be used with the tomato. Season with salt and paprika.

Almond Blanc Mange.—One and one-quarter ounces of gelatine, one quart of new milk, a little rosewater, a small blade of mace, twelve blanched almonds pounded very fine, a little lemon peel and sugar to taste. First soak the gelatine in the milk for two hours, then simmer altogether till dissolved and strain into a mould. Serve cold with a nice boiled custard or whipped cream.

Graham Puffs.—To make them, beat the yolk of one large egg, add to it one cupful of milk and two saltspoonfuls of salt, mixing them thoroughly, and then beat in gradually three-quarters of a cupful of graham and the same amount of wheat flour. When the mixture is smooth and foamy fold in the stiffly beaten white of the egg. Fill hot muffin irons about one-third full of the batter and bake for about twenty-five minutes.

Hints to Housekeepers.

Equal quantities of blanched almonds, English walnuts or other nuts, and of crisp celery cut into pieces a half-inch long, served on lettuce or cress, make an excellent salad.

Use freshly boiling water in making tea and coffee; boiling, because if below the boiling point it would not extract their stimulating principles; freshly boiling, because long cooking renders it flat and tasteless.

The time is at hand when the lemonade will again be wanted. The best is made from boiling water. Squeeze the juice from three large or four small lemons into an earthen bowl. Add two tablespoonfuls of granulated sugar and the grated rind of one lemon. Turn in four cupfuls of boiling water and cover closely. When it is cool, stand on the ice until chilled.

A fresh spongecake, broken, not cut, is the best accompaniment for fresh strawberries. The old rule for this is six eggs, their weight in sugar, half their weight of flour and the juice and rind of half a large lemon. Separate the yolks and whites and beat both very light, mixing the sugar in the yolks. Next add the lemon and half the flour and half the whites and continue until all have been used, being careful to fold or cut the ingredients together rather than to stir them. Bake in a greased tin with an opening in the center in a quick oven forty-five minutes.

To develop the delightful aroma and flavor of coffee, it is necessary to roast it. After roasting it quickly deteriorates. Therefore buy in small quantities and keep perfectly airtight. Keep the coffee-pot well aired and scrupulously clean, as coffee readily absorbs foreign odors; sweeten occasionally by boiling in it a solution of soda or borax. Close the spout of the coffee-pot while making coffee to prevent the escape of steam and aroma. When cream is served in the coffee, the flavor will be better and less cream required if the cream is put in the cup before the coffee is added.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 12, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	July.	Sept.
Wednesday	76¼@74⅝	72¼@71⅛
Thursday	75 @73¼	71⅞@70¼
Friday	74⅛@72¾	70¾@70⅛
Saturday	72⅞@73⅝	70⅛@70⅛
Monday	73⅛@72⅛	70⅛@69⅞
Tuesday	72⅝@71⅛	69⅝@68⅛

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday	5s 11⅞d	5s 10⅞d
Thursday	5s 11⅛d	5s 10⅜d
Friday	5s 10¾d	5s 9⅞d
Saturday	5s 10¼d	5s 9⅝d
Monday	5s 10⅛d	5s 9⅝d
Tuesday	5s 9⅛d	5s 9⅛d

*Holiday.

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec.	May.
Thursday	1 03⅛@1 02⅝	——@——
Friday	1 02¾@1 02⅞	——@——
Saturday	1 02⅞@1 03	——@——
Monday	1 03 @1 02⅝	——@——
Tuesday	1 02⅛@1 01⅞	——@——
Wednesday	1 02⅛@1 02⅛	——@——

WHEAT.

The market for this cereal has inclined against the selling and producing interests most of the time since last review, and prospects are not favorable for any radical change for the better being experienced in the near future. A fairly good crop is now being harvested in this State. New wheat will in a few weeks be arriving freely. Deliveries of new wheat grown in Kern county were made to mills at Bakersfield fully two weeks ago. Stocks of old wheat in the State on 1st inst. are reported at about 190,000 tons, as against 418,000 tons a year ago. The quantity now on hand is a little larger than at the close of the seasons in either 1899 or 1898, and more than double the carry-over stock of crop of 1896-'97. Last year's wheat crop in this State, according to the returns above named, was about 630,000 tons. This year's California crop will probably not be far from 1,000,000 tons, leaving with the carry-over stock an exportable surplus of over 800,000 tons. Shipments from this port outward the past season of wheat and its equivalent in flour aggregate about 525,000 tons. The United States visible supply east of the Rocky mountains is given at 35,292,000 bushels, showing a decrease of 1,642,000 bushels the past week.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1901, delivery, $1.03⅛@1.07⅞.

May, 1902, delivery, —@—c.

Wednesday, at regular noon session of Call Board, December, 1901, wheat sold at $1.02⅛@1.02½; May, 1902, $—@—.

California Milling	$1 00	@1 05
Cal. No. 1 shipping, alongside	97½@	98¾
Oregon Valley	1 00	@1 02½
Washington Blue Stem	1 00	@1 05
Washington Club	98¾@1	02½
Off qualities wheat	95 @	97½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s1d@6s1½d	6s1½d@6s2d
Freight rates	38¾@—s	37½@38¾s
Local market	$0 92½@95	$0 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

STOCKS OF GRAIN IN STATE JUNE 1.

Stocks of cereals, etc., in the State on June 1st, 1901, and previous dates, are given by the Produce Exchange as follows:

	1901.	1900.	1899.	1898.
Flour, bbls.	174,777	95,090	70,906	87,380
Wheat, ctls.	3,746,820	8,367,840	3,394,160	3,152,680
Barley, ctls.	746,220	2,108,520	232,420	943,060
Oats, ctls.	43,580	147,980	23,460	109,380
Rye ctls.	80,260	54 240	10,560	54,300
Corn, ctls.	13,820	28,780	25,560	112,780
Beans, sks.	118,000	114,088	308,973	561,262

FLOUR.

Market is quiet and presents an easy tone, without any quotable changes to note in values. Stocks of flour in State on 1st inst. are given at 175,000 barrels, which is the largest quantity reported on hand at corresponding date since 1897.

Superfine, lower grades	$2 25	@2 40
Superfine, good to choice	2 50	@2 75
Country grades, extras	3 00	@3 25
Choice and extra choice	3 25	@3 50
Fancy brands, jobbing	3 50	@3 65
Oregon, Bakers' extra	2 75	@3 15
Washington, Bakers' extra	2 75	@3 25

BARLEY.

Prices for this cereal have been further shaded in favor of buyers since last review, and there is nothing to warrant anticipating any noteworthy improvement for some time to come. The crop now being harvested promises to be of quite fair proportions and larger than for the past two seasons. There is not much old barley to be carried over, however, only 37,300 tons being reported remaining in the State, as against 105,400 tons a year ago. At current values there should be an active shipping demand for export grades, and probably will be during the next four or five months, if ships can be secured without having to pay too stiff freight rates to carry the grain outward. No. 1 feed, new, deliverable at seller's option any time within the current calendar year, was sold on Call Board at 66⅞@67c. No. 1 feed, December delivery, sold down to 68¼c.

Feed, No. 1 to choice	71¼@	73¾
Feed, fair to good	68¾@	71¼
Brewing, No. 1 to choice	77½@	82½
Chevalier, No. 1 to choice	—@—	
Chevalier, No. 2	—@—	
Chevalier, poor	—@—	

OATS.

There is not much now on market, and with trading of very light proportions, values are not well defined. New crop oats are expected to be on hand in quotable quantity in about a fortnight, and decidedly lower prices than are now nominally current will undoubtedly be established.

White Oats, fancy feed	1 45	@1 50
White, good to choice	1 35	@1 42½
White, poor to fair	1 25	@1 32½
Gray, common to choice	1 30	@1 42½
Milling	1 42½	@1 50
Surprise, good to choice	1 50	@1 55
Black Russian	1 12½	@1 30
Red	1 25	@1 40

CORN.

Stocks are not heavy, but there is more on market than for some time past, both of imported and domestic, the increase in offerings being mainly in Large Yellow and White. Values for both Large Yellow and Large White show a quotable reduction.

Large White, good to choice	1 27½	@1 32½
Large Yellow	1 27½	@1 32½
Small Yellow	1 55	@1 60
Eastern, in bulk (carload lots)	1 20	@——

RYE.

There is more offering than immediate demand can be found for, despite low asking figures.

Good to choice, new	77½@	82½

BUCKWHEAT.

Same inactivity as for some time past, the market being bare of offerings.

Good to choice	1 85	@2 00

BEANS.

The main feature of the week has been the improved inquiry for Bayos and Pinks, and the firmer tone to the market for these varieties. Prices for white beans and Limas remain steady, under very limited offerings, with no prospect of any increase in supplies for several months to come. Stocks of beans in the State on 1st inst. are reported at 118,000 sacks, being about same quantity as a year ago. Most of the present supplies, or 90,000 sacks, are credited to San Francisco warehouses.

Pea, fair to good, 100 lbs	4 75	@5 00
Small White, good to choice	4 75	@4 90
Lady Washington	3 90	@4 15
Butter	—@—	
Pinks	1 40	@1 65
Bayos, good to choice	2 40	@2 65
Reds	3 00	@3 25
Red Kidney	4 25	@4 50
Limas, good to choice	6 25	@6 40
Black-eye Beans	2 75	@3 00
Horse Beans	1 00	@1 25
Garbanzos, large	2 00	@2 25
Garbanzos, small	1 25	@1 75

DRIED PEAS.

There are none arriving at present from any quarter. Quotations are based on latest reported transactions, and remain nominally as last noted.

Green Peas, California	2 65	@2 80
Niles Peas	1 60	@1 75

WOOL.

Market is very quiet, no noteworthy transfers having been effected, so far as reported, for a week or more past. Most of the wools now in stock in this center are such as have to go through scourers' hands before being suitable for shipment. Humboldt and Mendocino spring clip is yet to come forward, and this stock will probably meet with more prompt sale than the wools now offering. Quotations are without special change, but market is weak at these figures.

SPRING.

Humboldt and Mendocino	14	@15
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	14	@15
Oregon Valley, coarse to medium	12	@13
Eastern Oregon, choice	11	@13
Eastern Oregon, fair to good	9	@10
Nevada, as to condition	10	@12

HOPS.

Practically nothing doing, stocks of old being nearly exhausted, and new to arrive are not obtainable on contract at figures which dealers, as a rule, now name, viz., 10@12c. for desirable marks.

Good to choice 1900 crop	13½	@16

HAY AND STRAW.

There are no large quantities of hay arriving, either new or old, and for best qualities the market is firm at prevailing rates, with prospects that prices will not rule materially lower the current year for desirable grades. Seriously damaged hay is dragging at a low range of values.

NEW CROP.

Wheat, good to choice	8 50	@10 00
Wheat and Oat	8 00	@9 50
Oat	7 00	@8 00
Oat, stained	4 50	@7 00
Barley and Oat	6 50	@8 00

OLD CROP.

Wheat	8 00	@13 50
Wheat and Oat	8 00	@12 00
Oat	7 00	@10 50
Barley	6 00	@8 00
Volunteer	5 00	@8 00
Alfalfa	7 00	@9 00
Stock	5 00	@7 00
Compressed	8 00	@12 00
Straw, ₱ bale	40	@47½

MILLSTUFFS.

The local mills are turning out very little offal and market continues tolerably firm, especially for Bran, offerings of which are mainly from Oregon. Market for Rolled Barley and Milled Corn inclined in favor of buyers, being weak at the quotations.

Bran, ₱ ton	17 00	@18 00
Middlings	17 50	@20 00
Shorts, Oregon	17 00	@18 00
Barley, Rolled	16 50	@17 00
Cornmeal	28 00	@——
Cracked Corn	29 00	@——

SEEDS.

Little doing in this department, offerings of most descriptions being exceedingly light. Quotable values remain nominally as last noted. Latest advices from Lompoc section are to the effect that the Mustard crop is not likely to come up to recent optimistic estimates.

	Per ctl.	
Mustard, Trieste	—@—	
Mustard, Yellow	—@—	
Flax	2 50	@3 00
Alfalfa, Utah	9	@ 9½
Alfalfa, California	8	@ 8½
	Per lb.	
Canary	3¼	@ 3¾
Rape	2	@ 2½
Hemp	3	@ 3½

BAGS AND BAGGING.

No changes of consequence have been developed in the Grain Bag market since last review. While there has been a fair inquiry, offerings have been ample to satisfy the demand at full current rates. In other bags and bagging there is no movement worth noting and no changes in values.

Calcutta Grain Bags, buyer June-July	7½	@—
Calcutta Grain Bags, spot	7½	@—
San Francisco Grain Bags, 22x36, spot	7¾	@ 7½
State Prison Bags in lots of 2000, ₱ 100	—	@—
Wool Sacks, 4 lbs	32½	@35
Wool Sacks, 3½ lbs	30	@32½
Fleece Twine	7½	@—
Gunnies	—	@12½
Bean Bags	4¾	@ 5¼
Fruit Sacks, cotton	6½	@ 7¼

HIDES, PELTS AND TALLOW.

Market for Hides is showing steadiness, most offerings meeting with ready sale at current figures. Pelts are not in active request. Tallow is quotably unchanged, but movement in same is not particularly brisk.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.		Culls.	
Heavy Steers, over 56 lbs	10	@—	8½	@—
Medium Steers, 48 to 56 lbs	9	@—	7½	@—
Light Steers, under 48 lbs	8	@ 8½	7	@—
Heavy Cow Hides, over 50 lbs	8½	@ 9	7	@7½
Light Cow Hides, under 50 lbs	8	@ 8½	7	@—
Wet Salted Kip	9	@—	8	@—
Wet Salted Veal	9	@—	8	@—
Wet Salted Calf	10	@—	9	@—
Dry Hides	15½	@16	13½	@—
Dry Kip and Veal, 11 to 16 lbs	15	@—	12	@—
Dry Calf, under 4 lbs	16	@—	14	@—
Salted Horse Hides, large	2 50		@	—
Salted Horse Hides medium	2 00		@	—
Salted Horse Hides, small	1 00		@	—
Dry Horse Hides, large	1 75		@	—
Dry Horse Hides, small	1 00		@1	25
Dry Colts' Hides	50		@	—
Pelts, long wool, ₱ skin	75		@1	00
Pelts, medium, ₱ skin	50		@	75
Pelts, short wool, ₱ skin	30		@	40
Pelts, shearling, ₱ skin	10		@	25
Deer Skins, best summer	35		@	—
Deer Skins, good medium	—		@	30
Deer Skins, thin winter	—		@	10
Elk Hides	10		@	12
Tallow, good quality	4¼		@	4½
Tallow, No. 2	3½		@	3¾
Goat Skins, perfect	30		@	37½
Goat Skins, damaged	10		@	20
Kid Skins	5		@	10

HONEY.

Not much arriving here, bids being in the main too low to attract consignments. Some small transfers are being made at an advance on quotations. There is considerable movement reported outward to the East from southern points.

Extracted, White Liquid	5	@ 6
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3½	@ 4
White Comb, 1 lb frames	11½	@12½
Amber Comb	9	@10
Dark Comb	6	@ 8

BEESWAX.

Market is lightly stocked, and gives no evidence of being any more favorable to buyers than for some time past.

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

There has been a somewhat unsettled condition to the market the current week, owing to labor troubles, more particularly the differences between some of the journeymen butchers and their employers. Beef and Mutton were rather slow of sale and market lacked firmness. Prices for Hogs were in the main well sustained, with arrivals not heavy and wholly home product.

Beef, first quality, dressed, net ₱ lb	7	@ 7½
Beef, second quality	6½	@ 7
Beef, third quality	6½	@—
Mutton—ewes, 6½@7½c; wethers	7	@ 8
Hogs, hard grain fed, medium	6	@ 6½
Hogs, small, fat	6	@ 6½
Hogs, large, hard	5¾	@ 5¾
Hogs, feeders	—	@—
Hogs, country dressed	7½	@ 7¾
Veal, small, ₱ lb	8	@ 9½
Veal, large, ₱ lb	7½	@ 8½
Lamb, spring, ₱ lb	8½	@—

POULTRY.

Market was not so heavily stocked as during preceding week with either domestic or Eastern. While there was a slightly improved tone, prices for most kinds continued at a decidedly low range. Large and fat young chickens were in slim receipt and sold to good advantage. Common old and small young fowls were in more than ample supply for the demand.

Turkeys, live hens, ₱ lb	9	@ 11
Turkeys, live gobblers, ₱ lb	9	@ 11
Hens, California, ₱ dozen	3 50	@4 00
Roosters, old	3 50	@4 00
Roosters, young (full-grown)	6 00	@7 00
Fryers	4 00	@4 50
Broilers, large	2 50	@3 50
Broilers, small	1 50	@2 50
Ducks, old, ₱ dozen	3 50	@4 00
Ducks, young, ₱ dozen	4 00	@4 50
Geese, ₱ pair	1 00	@1 25
Goslings, ₱ pair	1 00	@1 25
Pigeons, old, ₱ dozen	1 25	@1 50
Pigeons, young	1 25	@1 50

BUTTER.

No special changes have been effected in quotable rates or the general tone of the market since last review, but current values were in the main well sustained, especially for most select qualities of both creamery and dairy product.

Creamery, extras, ₱ lb	18	@18½
Creamery, firsts	17	@17½
Creamery, seconds	—	@—
Dairy, select	17	@17½
Dairy, firsts	16½	@17
Dairy, seconds	14	@15
Dairy, soft and weedy	—	@—
Mixed store	12½	@13½
Creamery in tubs	17	@19
Pickled Roll	—	@—
Firkin, California, choice to select	16	@17
Firkin, common to fair	14	@15

CHEESE.

Market is in practically same shape as last noted. Domestic plats are in liberal supply, and prices are being shaded to buyers where free sales can be effected by so doing. Young Americas are not in heavy stock, but there is a sufficiency for immediate needs.

California, fancy flat, new	8	@ 8½
California, good to choice	7¾	@ 8
California, fair to good	7½	@ 7¾
California Cheddar	—	@—
California, "Young Americas"	9½	@10

EGGS.

Choice to select ranch are commanding an advance, with market firm for this description at the improved values. Common qualities continue plentiful and are offering at much the same easy figures as previously quoted.

California, select, large, white and fresh	18	@19
California, select, irregular color & size	16	@17
California, good to choice store	14	@15

VEGETABLES.

Changes in quotable values were not numerous or very pronounced the current week. The general trend of prices was

favorable to the consuming interest, as is to be expected at this time of year, but choice to select qualities, nevertheless, brought in the majority of instances very good average figures. New Onions, both Red and Yellow, met with sufficient inquiry to keep values tolerably steady. Old Onions from Australia are still offering in moderate quantity, but at lower values than had been ruling.

Asparagus, ℔ box	50	@1 50
Beans, String, ℔ lb	1½@	3½
Beans, Wax, ℔ lb	2 @	3½
Cabbage, choice garden, ℔ 100 lbs	60 @	70
Cauliflower, ℔ dozen	50 @	—
Corn, Green, ℔ doz	10 @	25
Cucumbers, ℔ box	1 00	@1 25
Egg Plant, ℔ lb	5 @	6
Garlic, ℔ lb	3 @	4
Onions, Yellow Danver, ℔ cental	1 00	@1 25
Onions, New Cal. Red, ℔ cental	40 @	60
Peas, Sweet garden, ℔ lb	2 @	2½
Peas, good to choice, ℔ sack	1 00	@1 25
Peppers, Green Chile, ℔ lb	12½@	15
Rhubarb, ℔ box	35 @	50
Rhubarb, Mammoth, ℔ box	60 @	75
Squash Summer, ℔ small box	50 @	65
Summer Squash, Bay, ℔ large box	1 25	@1 50
Tomatoes, ℔ box	65	@1 00

POTATOES.

Market for new potatoes has not fluctuated to any great extent since last review. The market as a whole presented a fairly healthy tone, with demand for choice to select about equal to the immediate supply. That there will be any decided weakness developed in the near future is not now considered probable. Old potatoes continue to arrive from the North, but only in very limited quantity, and the demand for them is also light, as is to be expected at this advanced date.

Burbanks, Petaluma-Tomales, ℔ ctl.	1 00	@1 30
Burbanks, Oregon, lb cental	1 00	@1 50
New Potatoes, in boxes, ℔ cental	1 00	@1 75
New Mission Garnet Chile, in sacks, ℔ cental	1 25	@1 40

The Fruit Market.

FRESH FRUITS.

There were increased receipts of deciduous fruits, and a generally easier market for Apricots, Peaches and Plums. The majority of offerings continued to show rather poor average quality, and for common stock inside or lowest quotations were less readily realized than were top figures for choice fruit. In some instances very select sold slightly above quotable rates. Cherries arrived in limited quantity and such as were of fine quality were eagerly sought after at good prices. Currants inclined against buyers. Strawberries ruled steady. Blackberries and Raspberries sold at lower prices than preceding week. Gooseberries brought much the same figures as last quoted. Figs and Watermelons from Arizona were in light receipt and not in very active request at the prices asked. Nutmeg Melons are also offering from Arizona.

Apples, Red Astrachan, ℔ 50-lb. box	75@	1 00
Apples, green, ℔ small box	25@	40
Apricots, Royal, ℔ box	40@	75
Blackberries, ℔ small crate	50@	65
Cherries, Black, ℔ box	65@	1 00
Cherries, Royal Anne, ℔ box	75@	1 00
Cherries, Royal Anne, ℔ lb	6@	8
Cherries, Black, ℔ lb	4@	8
Cherries, White, ℔ box	40@	60
Cherries, common White and Red, ℔ lb	3½@	5
Currants, ℔ chest	3 00@	5 00
Figs, Arizona, ℔ box	2 00@	2 50
Gooseberries, common, ℔ lb	2@	3
Logan Berries, ℔ chest	4 00@	6 00
Nutmeg Melons, Arizona, ℔ box	1 00@	2 00
Peaches, ℔ box	25@	50
Pears, Madeline, ℔ small box	25@	40
Plums, Cherry, ℔ drawer	25@	40
Plums, Clyman, ℔ box	25@	50
Raspberries, ℔ chest	6 00@	9 00
Strawberries, Longworth, ℔ chest	7 00@	10 00
Strawberries, Large, ℔ chest	4 00@	6 00
Watermelons, Arizona, apiece	25@	50

DRIED FRUIT.

The market for cured and evaporated fruits is in the main quiet, as is natural at the end of the season, especially as there is not much strictly choice stock of any variety offering, and little or no desire to load up with ordinary qualities, even at low prices. The dried fruit which is offering most freely and which is being urged to sale is in the main of common quality. It is the exception where choice can be secured without paying top quotations or more, and of most varieties no great quantities of high grade are obtainable at any figure. Especially is this the case with Apples, Apricots, Pears and Figs. There are scarcely any Black Figs offering and not many White. Market is practically bare of choice Apricots and choice Pears; there would be no trouble in finding custom for either of these kinds at full current rates. New Apricots are quotable nominally at 7½@8½c for choice Royals, with no sellers at inside price, while outside figure is above the views of most operators who show any inclination to buy for future delivery. There has been a fair movement in Prunes, but at much the same low figures as lately current, transfers of other than large Prunes being mostly on a 2¼@2½c basis for the four sizes. Full figures are demanded for large Prunes, with few of these offering.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6	@ 6½
Apricots, Royal, choice, in sacks, ℔ lb	7	@ 7½
Apricots, Moorpark	9	@10
Apples, in 50-lb boxes, rings, pressed, fancy	5	@ 5½
Apples, 50-lb boxes, rings, pressed, good to choice	3	@ 4
Figs, White, fancy pressed	6	@ 7
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5	@ 5½
Peaches, unpeeled, choice	3½@	4
Peaches, peeled, in boxes	11	@13
Pears, unpeeled Bartletts, halved, fancy	5	@ 6
Pears, halved, unpeeled Bartletts	3	@ 4
Pears, quartered, unpeeled Bartletts	3	@ 4
Plums, Black, pitted	3½@	4½
Plums, White and Red	4½@	5½
Prunes, Silver	4½@	6

COMMON SUN-DRIED.

Apricots	4	@ 5
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	2	@ 3
Figs, White	2½@	3½
Peaches, unpeeled	2	@ 3
Pears, prime halves	1½@	2½

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

No changes are reported in quotable values for raisins of any description. There has been a fairly active movement in seeded raisins, but no special movement in other kinds. Market for bleached Sultanas is very firm, with few offering, either domestic or foreign.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—
(Usual advance for fractions.)		
Loose Muscatel, 4-crown standard, ℔ lb		—@ 7
Loose Muscatel, 3-crown		—@ 6½
Loose Muscatel, 2-crown standard		—@ 6
Loose Muscatel, seedless		—@ 6½
(Above prices for loose raisins are for 50-lb boxes.)		
Seeded Raisins, 1-lb packages, ℔ lb		5¼@—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., 12c; choice, 11c; standard, 10c; prime, 9c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., 10¼c; choice, 9½c; standard, 8¾c; prime, 8c. Unbleached, 7@8c.

CITRUS FRUITS.

Orange market is lightly stocked with choice, and is firm for this description, but there are more than enough of common qualities. Lemons have ruled fairly steady, although the cooler weather has operated against any active movement. Limes were quiet at unchanged prices.

Oranges—Navel, ℔ box	1 25	@2 75
Seedlings, ℔ box	1 00	@1 75
Valencias, ℔ box	2 00	@3 00
Grape Fruit, ℔ box	75	@1 50
Lemons—California, select, ℔ box	2 25	@2 50
California, good to choice	1 75	@2 00
California, common to fair	1 00	@1 50
Limes—Mexican, ℔ box	4 00	@5 00

NUTS.

Almonds are being very steadily held, but not much doing in them at this date. Walnuts are too scarce to quote. In Peanuts there is a moderate jobbing trade, and no changes to record in quotable values.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@14
California Almonds, soft shell	10	@12
California Almonds, hard shell	6	@ 7
Peanuts, California, fair to prime	4½@	5½
Peanuts, Eastern, hand-picked	5½@	6
Pine Nuts	5	@ 6

WINE.

The market continues quiet but firm. There is little chance for any wholesale trading, owing to absence of noteworthy offerings from first hands. Values for dry wines of last crop are quotable nominally at 22@25c. per gallon. There is every indication that the coming season will be a favorable one for the producing interest. A good demand at profitable figures is almost certain to be experienced. Stocks in the hands of the wholesale and jobbing trade are showing steady reduction and are by no means heavy at this date.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	143,000	6,301,903	6,167,683
Wheat, centals	188,425	7,860,639	6,692,111
Barley, centals	44,445	3,676 135	4,989,728
Oats, centals	2,120	605,400	777,359
Corn, centals	4,070	109,300	146,196
Rye, centals	2,935	117,565	101,142
Beans, sacks	913	545,664	364,303
Potatoes, sacks	23,400	1,488,037	1,201,540
Onions, sacks	4,376	179,938	166,663
Hay, tons	2,290	155,720	149,766
Wool, bales	523	53,828	56,336
Hops, bales	...	8,234	10,638

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	49,540	3,695,776	4,122,442
Wheat, centals	69,785	7,365,736	5,984,363
Barley, centals	2,463	2,013,292	3,870,207
Oats, centals	365	49,466	45,701
Corn, centals	...	3,538	20,609
Beans, sacks	156	13,783	26,421
Hay, bales	...	86,169	137,786
Wool, pounds	220,000	1,264,291	4,324,433
Hops, pounds	620	562,416	1,077,706
Honey, cases	10	2,185	3,582
Potatoes, pack's	338	130,397	72,562

California Dried Fruit at New York.

NEW YORK, June 12.—Evaporated apples, common, 3½@4c; prime wire tray, 5½@5¾c; choice, 6@6½c; fancy, 6½@7c.

California Dried Fruits.—Market slow throughout at nominally unchanged values.

Prunes, 2⅝@6¼c.

Apricots, Royal, 8@12½c; Moorpark, 8½@14c.

Peaches, unpeeled, 6@10c; peeled, 12@18c.

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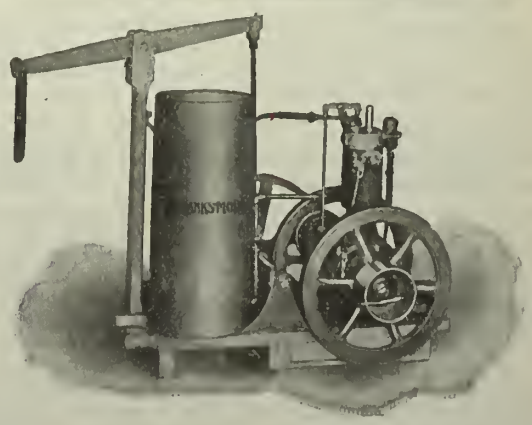

CEREAL CROPS.

Revolution in Wheat Production Promised.

By W. S. Harwood, in Modesto Herald.

A revolution in the production of wheat is promised—the beginnings of it have in fact been achieved—by the successful experiments made during the last ten years at the Minneapolis State Experiment Station, associated with the agricultural school of the University of Minnesota. The aim was to make new breeds of wheat. Both yield and quality are greatly increased.

The new wheats, which are the product of breeding and selection combined, have been tested for every purpose. They are not only larger in yield than the old wheats, and better able to withstand unfavorable weather and disease, but they are as rich in essential food qualities. During the summer of 1900 the experimental stage was passed and actual farm trials were made, for a farm trial is the ultimate test of a new wheat. Whatever favorable results may be shown in the experimental stages, the wheat must still stand the final practical test in the fields of the farmer. In the fields it has now proved its right to supplant the old standard varieties. The concrete results are these: a toning up of the wheat harvest, not only of the region where the experiments are carried on, but of the entire wheat area of the world; the overthrowing of the argument of Sir W. Crooks, president of the British Association, that the supply of the wheat of the world would soon become inadequate for the needs of the world; a marked increase in the world's wealth, millions of dollars being added in a single season in only one section of the wheat-producing area of the world.

Wheat Breeding.—The work of wheat breeding began many years ago on the great Vilmorin estate, in France. M. Henri Vilmorin carried on extensive experiments in the creation of new breeds, more than 1000 new wheats having been tested by him. I shall not forget a trip of his farms at Verrieres-le-Buisson, under the guidance of the present head of the house, M. Philippe Vilmorin. Ten years ago similar work was begun at the State institution in Minnesota, not only to create new breeds of wheat, but to carry them forward through a series of years until enough wheat of a superior variety should be accumulated to enable the farmers to make the final test themselves. This work has been carried on at no expense to the farmer, for all the results are for the benefit of the public.

To create a new wheat the pollen from the flower of one wheat must be artificially transferred to the stigma of the flower of another wheat. Wheat is a self-fertilizing plant. Left to itself, it will reproduce itself throughout endless centuries. Great care is necessary in the work, and trained men are essential. As soon as the pollen is transferred—which is done about 4 o'clock in the morning, at the hour when the wheat florets open—the head of wheat is encased in a tissue sack, so that the work may not be interfered with by any pilfering insect or bird. Two of the best known varieties are selected, one for the father, the other for the mother of the new race. When the harvest comes it may be that the new wheat has some of the poor, and few of the good characteristics of the parents; or the reverse may be the case. It is impossible to say in advance what the new wheat will be.

First of a New Kind.—From the single head which results as the first harvest, only a handful of kernels is threshed out. This handful is of immense importance, for these kernels may become the source of a mighty race, destined not only to supplant the old wheats, but to add enormously to the wealth of the world. But the last results are slowly won, for the first harvest is very meager and the second and even the third are small. But after a number of years enough wheat can be garnered to sow the twentieth of an acre, and then come tangible results. To breed a new wheat requires infinite pains and patience. It has taken ten years to bring the new wheat varieties at the Minnesota Experiment Station to the farm test.

In the meantime hundreds of wheats have been proven valueless. Some were too heavy in the stalk, thus "lodging," as it is called, falling over in seasons of much moisture because of too rank growth; some were particularly susceptible to the diseases of wheat; some were poor in the color of the kernel, while still others were deficient in yield or lacking in essential food elements. A successful new wheat must not only yield a larger number of bushels per acre—the first and all-important requisite, but it must be hardy and it must be rich in food qualities.

From the hour of the creation of the new wheat in the gray of a summer morning, throughout its life, a careful record is kept of every event in its history, in a book which is the record of the wheat's life.

Selection plays an important part as well as breeding. At every step only the best wheat kernels and wheat stalks are preserved; defectives are rejected. No effort is spared to give the new wheat the best possible start in life. In some ways the selection may be considered more important than the breeding itself. During these experiments nearly 500 wheats were thrown away as deficients. Out of the entire number bred, less than a dozen were retained. A number of those which were kept for future trials were especially prolific, registering as high as eight to ten bushels per acre above the old wheats planted alongside of them and receiving the same treatment.

Field Trials.—In the spring of 1900, enough of one variety of the new wheat having accumulated to warrant field trials, a number of thrifty and intelligent farmers from various parts of Minnesota were selected, and to them enough seed was sent to give it a fair trial. Every farmer was supplied with an elaborate record blank. If for any reason the new wheat should be given a better chance or a worse chance than the old, especial attention should be called to the fact. Some of the reports indicated, by the abnormally large increase of the new wheat, that the farmer had given it a better opportunity than the old wheat, even though he did not say so, and all such instances were thrown out as being unfair to the old wheat. Other farmers were as plainly unfair to the new wheat, and their data were rejected. Out of all the instances, about forty were selected as having complied with all the conditions.

What Is Gained.—The new wheat averaged almost 4½ bushels per acre more than the Fife wheat, one of the old standard varieties, and almost 1½ bushels more than the average of all the wheats with which it was compared. In some few instances the new wheat was below the old, and there may be some regions where a new wheat will have to be bred to meet the climatic and soil conditions, for it is now possible to make a wheat to order.

It seems fair to say that the increase of the new wheat over all old varieties will be at least two bushels per acre. In the three States of Minnesota, North Dakota and South Dakota there are on an average about 15,000,000 acres of land planted to wheat. When the new wheat is in use over all this region, an increase of only two bushels per acre will make a crop at least 30,000,000 bushels larger than the old varieties would have yielded. At an average price of 75 cents per bushel, the increase in wealth in the region will be $22,500,000 a year.

The new wheat which has been grown under the direction of Prof. Willet M. Hayes of the Minnesota School of Agriculture will be given a much wider field trial among the farmers this summer. Those who planted the wheat last season have, in addition to their seed supply, about 4000 bushels to sell to other farmers, and the new wheat, it is expected, will have quite an appreciable effect upon the harvest of 1901.

The wheat known as Minnesota No. 163 has yielded as high as 42.7 bushels per acre, while none of the eight new wheats during the six years' trial have ever run behind 19.5 bushels. The average of each new wheat for a period of six consecutive years, from 1895 to 1900, inclusive, is in no case less than 27 bushels per acre, while the average of all the averages of the new wheat is 28.1 bushels per acre. The general average of the standard varieties in the regions on the farms is from 13 to 15 bushels per acre, so that, while making due allowance for superior farming at the station, the allowance of an increase of two bushels per acre when the new wheat passes into complete sway in the Northwestern wheat fields, seems far too low. On a number of farms of the higher type it showed more than two bushels' increase in last season's harvest.

The tabular statement subjoined shows in condensed form what the eight best wheats have accomplished at the station. Each of these is given a number rather than a name, prefaced by the word Minnesota. Some of the eight give promise of yielding better results than have been achieved by Minnesota No. 163, the wheat now under test by the farmers. In the table the first three wheats are the old, standard varieties. The table shows results for a period of six years:

YIELD OF VARIOUS WHEATS OVER A PERIOD OF SIX YEARS.

	Minn. No.	Yield 1895.	1896.	1897.	1898.	1899.	1900.	Average.
Haynes' Blue Stem	51	21.6	24.6	20.4	23.3	25.9	30.5	24.4
Powers' Fife	66	26.3	21.4	17.4	24.0	30.4	31.5	25.2
Bolton's B. S.	146	35.3	25.1	21.5	22.5	28.8	32.3	27.6
Minnesota	149	36.2	23.3	19.9	26.5	31.8	29.9	27.9
Minnesota	155	32.3	23.3	20.8	26.8	32.0	29.0	27.4
Minnesota	157	30.9	22 0	21.4	26.6	33.0	30.0	27.3
Minnesota	163	42.7	23.0	19 9	25.0	30.3	34.3	29.2
Minnesota	167	35.0	24 9	19.7	27.0	30.0	30.6	27.9
Minnesota	169	37.8	25.0	24.3	26.3	28.8	39 9	28.8
Minnesota	171	35.0	21.7	19.8	26.3	32.0	36.3	28.5
Minnesota	181	34.5	22 2	19.5	26.5	25.6	39.6	28.0

It does not seem too much to say that science has here achieved a notable triumph; for it has not only given to the world additional safeguards to one of the most important industries known to the race, but it has added materially to the world's wealth.

Good Whitewashes.

Slake in boiling water one-half bushel of lime, keeping it just fairly covered with water during the process. Strain it to remove the sediment that will fall to the bottom and add to it a peck of salt dissolved in warm water, three pounds of ground rice boiled in water to a thin paste, one-half pound Spanish whiting, and a pound of clear glue dissolved in warm water. Mix the different ingredients thoroughly and let the mixture stand for several days. When ready to use apply hot. If a less quantity is desired use the same proportions.

A good whitewash for use upon outside work may be prepared as follows: Slake in boiling water one-half bushel of lime and strain as before. Add to this two pounds of sulphate of zinc and one pound of salt dissolved in water. If any color but white is desired add about three pounds of the desired coloring matter, such as painters use in preparing their paints. Yellow ochre will make a beautiful cream color and brown. Reds and various shades of green are equally easily obtained.

Another excellent whitewash lasting almost as long as ordinary paint may be made as follows: Slake in boiling water one-half bushel of lime, strain as before, add two pounds of sulphate of zinc, one pound of common salt and one-half pound whiting thoroughly dissolved. Mix to proper consistency with skimmed milk and apply hot. If white is not desired add enough coloring matter to produce the desired shade. Those who have tried this recipe consider it much superior both in appearance and durability to ordinary washes, and I would not hesitate to declare that it compares very favorably with good lead paints. It is much cheaper than paint and gives the houses and yards to which it is applied a very attractive appearance.—Exchange.

THE GOVERNMENT WHITEWASH.

The enduring whitewash used in all departments of the United States Government where such a preparation is needed is thus made:

Take a half bushel of unslaked lime, slake it with boiling water, cover during the process to keep in steam, strain the liquid through a fine sieve or strainer, and add to it a peck of salt, previously dissolved in warm water; three pounds of ground rice boiled to a thin paste and stirred in while hot; half a pound Spanish whiting and one pound of glue, previously dissolved by soaking in cold water, and then hanging over in a small pot hung in a larger one filled with water. Add five gallons of hot water to the mixture, stir well and let it stand a few days covered from dirt. It should be applied hot, for which purpose it can be kept in a portable furhace. The east end of the President's house in Washington is embellished by this brilliant whitewash, and it is used by the Government to whitewash lighthouses. A pint of this mixture, if properly applied, will cover a square yard, and will be almost as serviceable as paint for wood, brick or stone, and is much cheaper than the cheapest paint.

Population of the United States by States and Territories, 1900.

The population of the United States, including that of Alaska, Hawaii and Indian Territory, and Indian reservations, taken as of June 1, 1900, is 76,303,387, distributed by States and Territories as follows:

States—		States—	
Alabama	1,828,697	Oregon	413,536
Arkansas	1,311,564	Pennsylvania	6,302,115
California	1,485,053	Rhode Island	428,556
Colorado	539,700	South Carolina	1,350,316
Connecticut	908,420	South Dakota	401,570
Delaware	184,735	Tennessee	2,020,616
Florida	528,542	Texas	3,048,710
Georgia	2,216,331	Utah	276,759
Idaho	161,772	Vermont	243,641
Illinois	4,821,550	Virginia	1,854,184
Indiana	2,516,462	Washington	518,103
Iowa	2,231,853	West Virginia	958,800
Kansas	1,470,495	Wisconsin	2,069,042
Kentucky	2,137,174	Wyoming	92,531
Louisiana	1,381,625		
Maine	694,466	Total States	74,607,225
Maryland	1,188,044		
Massachusetts	2,805,346	Territories—	
Michigan	2,420,982	Alaska	63,592
Minnesota	1,751,394	Arizona	122,931
Mississippi	1,551,270	Dist. of Columbia	278,718
Missouri	3,106,665	Hawaii	154,001
Montana	243,329	Indian Territory	392,060
Nebraska	1,066,300	New Mexico	195,310
Nevada	42,335	Oklahoma	398,331
New Hampshire	411,588		
New Jersey	1,883,669	Total Territo's.	1,604,933
New York	7,268,894		
North Carolina	1,893,810	Army and navy	91,219
North Dakota	319,146		
Ohio	4,147,545	Grand total	76,303,387

No provision was made by the census Act for the enumeration of the inhabitants of Porto Rico, but a census for that island, taken as of November 10, 1899, under the direction of the War Department, showed a population of 953,243. A similar enumeration, under the direction of the War Department, was made of the island of Cuba, and this census, taken as of October 15, 1890, showed a population of 1,572,797. No census of the Philippines, or of the islands of Guam and Tutuila, has been taken since they have been in the possession of the United States, although an attempt is now being made to take a partial census of the Philippines.

On the basis of the above figures, the aggregate population of the entire area of enumeration in 1890 is 76,303,387, which, compared with the population of equivalent areas in 1890, namely, 63,069,756, shows an increase during the decade of 13,233,631, or 21%.

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THE IRRIGATOR.

The Value of Irrigation.

By W. H. MILLS, in Woodland Democrat.

Of the practical value of irrigation it is not necessary to speak. Irrigation in California has long since passed its experimental stage. Its value has been thoroughly demonstrated, and the facts which place this value beyond all controversy belong to the realm of ascertained knowledge. I take the liberty, however, of presenting briefly, concerning the irrigation of the Sacramento valley, and of the irrigable lands of Yolo county particularly, some obvious considerations which are germain to the matters under consideration.

It is, or should be, apparent that the Sacramento valley, one of the largest, and actually the most fertile, valleys west of the Rocky mountains, has made but little progress in wealth and population in the last twenty-five years. The inhabitants of that valley have regarded every declaration of the necessity for irrigation as disloyal to the valley. They appear to have entertained the erroneous opinion that the assertion of all necessity for irrigation for the development of profitable agriculture was, in itself, a guarantee of high and increasing value.

The original intrinsic value of the lands in the Sacramento valley has prevented that line of development which would have conferred upon them their greatest value and upon the country its greatest prosperity. While it is true that crops of cereals can be grown in the Sacramento valley without irrigation, it is not true that even cereal crops will not be benefitted by irrigation. It is true that horticulture may be pursued in the Sacramento valley with profit unaided by irrigation; but it is not true that horticulture is as profitable without it as it would be with it.

But a more important consideration presents itself, and that is that industries have remained undeveloped which are vastly more valuable to the Sacramento valley than those which have come into being. The most prolific months of the year are those which, under the climatic conditions of California, constitute the winter of drouth or the suppression of vegetation. These are the calendar months of June, July, August and September. The greatest suspension of natural productiveness is in these months, while the greatest capacity for production belongs to them. There are from 150,000 to 200,000 acres of land lying subject to irrigation which could be made subject to irrigation from the channel of Cache creek. If these lands had been economically irrigated twenty years ago, Yolo county would to-day have contained 50,000 inhabitants, one-half of whom would have resided in the city of Woodland. There is no exaggeration in this.

A less area of partially irrigated territory supports the city of San Jose, with a population of 20,000. One hundred thousand acres of irrigated land at Fresno supports a population of 22,000. Thirteen thousand acres of irrigated land at Riverside supports a population of 10,000. In none of these localities is there so large or so valuable a body of land, the productiveness of which may be augmented in an untold ratio and the wealth-producing capacity of which may be increased to a greater extent than those subject to irrigation from the channel of Cache creek.

Lying dormant in Yolo county is a practically inexhaustible mine of wealth. If it was a deposit of gold, no one would hesitate for a moment to make an investment in its extraction. No man pauses before the necessity of spending a large sum of money to work a gold mine where there is reasonable prospect of return; but the working of every gold mine is attended by hazards, which are wholly absent when the wealth conferred by irrigation is under contemplation.

The earth is the only source of wealth. Agriculture is the great basis of all enterprise, of all financial undertaking. Railroad bonds, bank stocks, city property, commercial undertakings, manufacturing enterprises, all stand upon a foundation of agricultural industry, as the mountains stand upon the earth.

But there is a broad and important distinction between a mortgage incumbrance and the incumbrance which is incurred for the purpose of adding to the fertility and productiveness of land by irrigation. That distinction should be so clearly defined as to leave no room for doubt or error.

The ordinary mortgage upon an agricultural field adds nothing whatever to its productive capacity, the economy of its cultivation or its wealth-producing power. Irrigation, on the other hand, notwithstanding it has come into being at the cost of an expenditure of capital which in a sense does constitute a claim, and, therefore, an incumbrance upon the land, does augment the productive capacity of the land and its wealth-producing power. If ordinary incumbrances, in the form of mortgages, added a productive capacity to the land, mortgages would be sought as a matter of the highest economy. If the field that without irrigation produces a net of $10 per acre per annum can be made to produce $20 per acre per annum with an incumbrance of $2 per acre, the mortgage, instead of being an incumbrance, becomes an investment, instead of taking toll, in the way of interest, from the product of the land, pays for itself and pays the owner of the property a broad margin of profit upon the investment. In short, if the mortgage paid interest to the land owner, mortgages would be very popular, and this is exactly what irrigation does for irrigable lands, where that irrigation is certain of enhancing the productiveness of the land and is obtained at economic rates. That this distinction between the ordinary mortgage incumbrance and that incumbrance which attends the development of an irrigation system readily seen or freely accepted, is scarcely to be hoped for; and yet that distinction exists, with all the economic difference between a mortgage which is of itself productive and one which is in a measure destructive; between a mortgage which aids men not only to retain their ownership, but to extend the area of such ownership, and the ordinary mortgage, which is always a menace to the maintenance of title.

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TO THE EDITOR:—Considerable comment has been made on some resolutions passed at a joint meeting of Fullerton, Placentia and Anaheim Farmers' Clubs, as reported in Anaheim Gazette of May 30th and Los Angeles Times of May 29th. There were but three members of the local Citrus Association and four members of the local Walnut Association present. The parties offering the resolutions were not members of either.

I enclose proof slip which our directors prepared for publication and which you can use if you wish. J. B. NEFF.

Anaheim, June 4.

HOW SHALL WALNUTS BE MARKETED.

To the members of the Deciduous Fruit Association of Anaheim: An article was printed under the above title in the Anaheim Gazette of May 30th, together with an editorial, which contained statements entirely foreign to the truth and altogether misleading. In view of this, we thought it well to give you a statement of the matter just as it stands.

In the first place, there is no Walnut Growers' Exchange, as was so frequently reiterated. Each Association makes its own contract—either sells outright or has a broker sell for them.

There is a so-called executive committee, which has no authority to do business legally, and which cannot bind its members to any concerted action, nor make contracts of any kind. This committee has been in existence for three years, and when it was formed the representatives from this Association offered to join it if an incorporated exchange was formed.

In the second place, no walnuts of this Association were ever consigned, or ever will be, as long as the present management exists.

Thirdly, no walnuts of this Association were ever offered in the East at a lower price than the ruling price of the other Associations. On the contrary, two years ago we sold nearly all our No. 1 softshells at much higher figures.

In regard to the offer of a personal guarantee to bring us a broker to buy our walnuts, we will say that the same brokers who bought a few cars of us last year and then rejected 260 sacks of hardshell walnuts, which we afterwards sold at full Association rates, now want to sell walnuts for us at Association prices, notwithstanding that they have signed a contract not to take "outside walnuts," as they call them, except at 1 cent per pound less than Association price. This one rejection of theirs would have cost us $400 if we had been under contract to them and had no other way of marketing.

We paid last year ¼ cent per bag more than some of the other Associations for walnut bags; but we bought ours on "positive delivery," while theirs was bought "to arrive." We did not think the difference of $5 which we would have saved on our first purchase enough to warrant us in taking the chances of being without sacks when we needed them and having to pay any price that might be asked. Our saving on the single car of walnuts last year would pay any excess in price of bags we are likely to pay for the next twenty years.

This talk of the Anaheim Association consigning and offering walnuts at cut prices is the same story we are told by the brokers who did not make a profit off our walnuts, and it is clearly seen where it comes from.

If the walnuts of the other Associations are all sold out and not enough to go around, as they tell us, we are sure to get full prices and need have no uneasiness. If they have not sold all, we will sell ours and get the money before they get out of our possession.

We think it wisest to have our own paid agents who have an interest in getting the best possible price for us, instead of contracting with a broker whose sole aim is to get the most money for himself and at the least possible expense to himself.

J. B. NEFF, president.
J. A. EYMANN, secretry.
J. B. REA, vice-president.
L. W. KIRBY.
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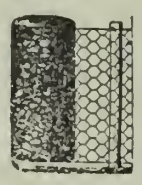
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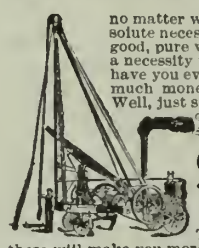
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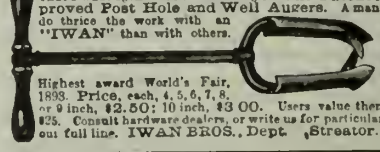
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the past year has been very great and we have been obliged to decline to quote prices to a good many inquirers as we had nothing to ship. We have one Berkshire boar farrowed Dec. 9, 1900, and also two Poland-China sows farrowed June 25, 1900, that we can sell and will describe them to anyone wishing such animals.
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THE VETERINARIAN.

Answers by Dr. Creely.

MORE HOG TROUBLES.

TO THE EDITOR:—We have some disease among hogs in this locality. It is mostly pigs that are attacked. They get stopped up in the head, run at the nose like a horse with the glanders, the eyes glue up, and the animals finally die.—J. H. S., Orland.

This is the same disease which was discussed under "Hog Cholera" in last week's PACIFIC RURAL PRESS.

PROBABLY LUMPY JAW.

TO THE EDITOR:—I have a calf with a lump on his jawbone and around the right ear. I would like to know what it is, and what can I do for it? I thought it was caused by a boil.—SUBSCRIBER, Nevada City.

If this enlargement seems a part of the jawbone, it is undoubtedly actinomycosis or lumpy jaw. The treatment is one-half drachm daily of iodide of potash to a good sized calf.

DR. E. J. CREELY.
510 Golden Gate Ave., S. F.

The Schmidt Treatment for Milk Fever.

This recourse, which has been previously discussed in our columns, seems to be accomplishing wonders. J. E. Wing writes to the Breeders' Gazette as follows:

"I do not treat my own cows, but employ a veterinarian. After carefully milking her out, I injected two and one-half drachms of iodide of potash dissolved in about a quart of water. The water is better if boiled and cooled to about blood heat. The boiling disinfects it. Be very careful not to inject anything unclean or you will have a case of garget on your hands. Inject an equal part of the fluid into each teat. Knead the udder gently to work it into every part. Give a dose of a drachm of iodide of potash through the mouth. This, substantially, has been the manner of treatment of our cows. It has resurrected two or three of them after they were practically dead. One afterward had garget; the other two were not injured in the least and soon came into a full flow of milk again."

The veterinary editor of the Gazette comments on the foregoing as follows: "It should be added that the quart of freshly boiled water used for the infusion of two and one-half drachms of iodide of potash into the udder should be filtered before use and that the udder after milking should be thoroughly washed with a 5% solution of creolin or other similarly effective disinfectant before introduction of the sterilized milking tube, through which the solution is introduced in equal portions into each teat successively by means of a 5-foot length of small rubber hose with glass funnel attachment. Massage of the udder should be repeated once an hour until the solution is found to have been absorbed. The administration of iodide of potash by the mouth is unnecessary, but hypodermatic injections of sulphate of strychnia (half to one grain) should always be given and will greatly assist in resuscitating the patient. Copious rectal injections of soapy warm water, administered by means of a 3-foot length of 1-inch rubber hose and large tin funnel, will also be found beneficial."

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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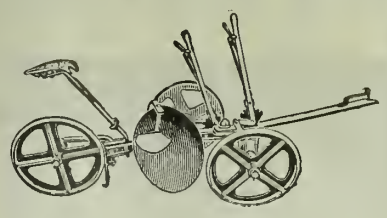
Rotary Disc Plows.



All the plow manufacturers have been making experiments of this style of plow, and this is evidence that they see sufficient merit in the principle of the disc plow to try to determine if they can make the plow so that it will do good work under all conditions. The Benicia Agricultural Works of Benicia, Cal., evidently have struck upon the right model, for they have placed orders to put up over 1000 of these plows for next season. From all accounts, it will be a surprise to other disc plow manufacturers, and many applications for agencies are already being made to the selling agents, Baker & Hamilton, San Francisco, Sacramento, Los Angeles. *

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING MAY 28, 1901.

675,314.—DUMB-BELL—F. B. Abenheim, S F.
675,342.—WOOD GRAINING—B. W. Augustine, Alameda, Cal.
675,123.—EXTRACTING GOLD—G. S. Bartholomew, Los Angeles, Cal.
675,319.—ROCK DRILL—W. S. Boyd, 3rd, Los Angeles, Cal.
675 264.—ORE PULVERIZER—A. C. Calkins, Los Angeles, Cal.
675,265—GYRATORY MULLER—A. C. Calkins, Los Angeles, Cal.
674,997.—SAW SHIFTER—E. Christensen, Portland, Ogn.
675,201.—BOAT—W. A. Douglas, Monroe, Wash.
675,365.—RAILWAY SIGNAL—W. D. Farren, Newman, Cal.
675,093.—WAVE MOTOR—J. J. Graff, S. F.
675,212.—REGISTERING APPARATUS—L. H. Handy, S. F.
675,281.—FURNACE.—A.W. Johnson, Tacoma, Wash
675,045.—FLOATING FISH TRAP—D. B. Kittredge, S. F.
675,227.—CAR STAKE—Lister & Bordeaux, Olympia, Wash.
675,046.—EXCAVATOR—H. Lough, S F.
674,925.—WHEEL—G W Lovejoy, Tahachapi, Cal.
675,358.—BICYCLE SUPPORT—A. McColium, San Jose, Cal.
675,252.—SCABBARD—G. R. Simmons, French Gulch, Cal.
675,308.—HOSE LEAK STOP—J. M. Voss, Los Angeles, Cal.
675,075.—WINDMILL—E. Warren, San Marcos, Cal.
675 256.—DUST PAN—F. F. Wellenman, Hollister, Cal.
674,892.—FILE HOLDER—O. R. Whitten, Prescott, Ariz.

SORE NECKS AND GALLS ON HORSES.

At the opening of the warm season it would not be out of place to throw out a few hints and precautions as to the treatment of horses suffering from those purely warm weather troubles—sore necks, shoulder gall, harness and saddle galls, etc. The most careful horseman may have trouble of this kind, as such things develop almost before you are aware of it. It is well to be on the lookout always when the weather is hot and when horses are likely to perspire freely from their exertions It is advisable always to keep the collars and harness well cleaned and freed from any excretion. The top of the neck, the shoulders and back of the horse should be kept clean and bathed at least every evening with some preparation that will tend to remove any possible inflamation and soreness. A preparation for this purpose is Tuttle's Elixir, manufactured by Dr. S. A Tuttle of Boston, Mass. It is for sale at all drug stores or will be sent direct by the manufacturers.

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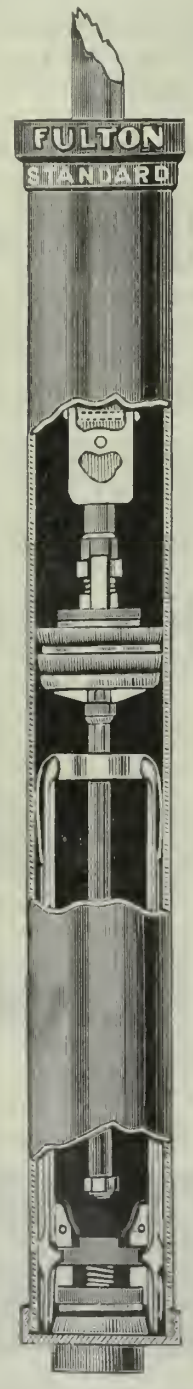

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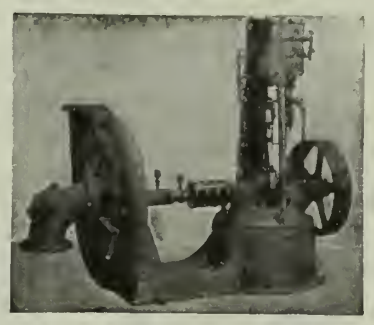

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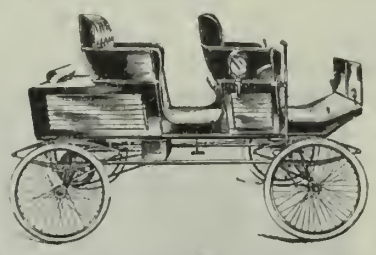

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 25. SAN FRANCISCO, SATURDAY, JUNE 22, 1901. THIRTIETH YEAR. Office, 330 Market St.

Elwood Mead and His Work.

Many readers will hear with regret of a street-car accident in Washington by which Prof. Elwood Mead, the irrigation expert, lost his right arm and is now striving for recovery with the aid of the best surgical attention. Prof. Mead has won wide respect on this coast by his accurate knowledge of irrigation conditions and breadth of view concerning all the relations of irrigation to public affairs. He has also made warm friends of all with whom he has come into personal contact, by the cordiality of his manners and the sincerity of his motives. Most earnest desire for his full and quick recovery and return to his work is everywhere expressed. We recently spoke of Prof. Mead's work at Harvard. After closing there the last of May he returned to the central West, attended several important meetings and went again to Washington, where he met the serious accident above referred to. About June 1, according to the Orange Judd Farmer, there was a meeting of Senators and Representatives of Nebraska and Wyoming, at Omaha, for the discussion of semi-arid land problems. One of the principal phases of this subject was whether or not the Federal Government should build and control storage reservoirs and supervise the distribution of the water. This has been suggested, but there is vigorous opposition. Prof. Mead said that he would prefer no irrigation if the Government should control it. His plan is to secure Federal legislation which will permit the sale of Government lands under certain conditions and the use of the funds secured thereby in building reservoirs. The distribution of water, however, and the details of the plan must be left to the States. One serious difficulty with this proposition is the fact that irrigation ditches frequently originate in one State and extend into others, consequently it is necessary to secure uniform legislation. The present State laws are so complex and conflicting that it has been impossible for the different States to unite in any irrigation enterprise. There was a meeting called for Cheyenne this week to further discuss the matters of public lands and irrigation, to which all congressional representatives west of the Missouri river were invited, but the time would seem to have been too short to secure a wide representation. It is very important, however, that the West should come to some understanding on the matter before December next, and we hope this may be attained. Prof. Mead's quick recovery will be very important toward this end.

Field Scenes in Kings County.

We are glad to show our readers on this page three scenes which are very significant of the resources and progress of the San Joaquin valley, and especially of Kings county, where the particular views were taken. Of the great and varied area of the San Joaquin, there is perhaps no greater body of rich, deep soil with ample moisture than forms the political division known as Kings county. It is a region of great diversity of products and was naturally enabled to carry itself through the late dry years as few counties were able to do. Recently notable progress and development have been secured, and all the plant and animal specialties are advancing. The pictures on this page give hints of the latter line of effort. The sheep at the watercourse is a reflection of abundance in water and pasturage. The cattle scene shows that Kings county stockmen have an eye for form and propose to grow the best. Hardly less significant of the resources of the district is the haying scene in an alfalfa field. Alfalfa is the sheet anchor of the valley live stock enterprises and nowhere does it do better than in Kings county.

Pastoral Scenes in Kings County.

Kings county is just now commanding very wide attention in eyes of newcomers and investors. To enjoy this advantage it is not only necessary to have good land and products, but to make them known. We have before us a copy of the Kings County Directory, published by F. V. Dewey of the Hanford Daily Journal, which is fitly illustrated with agricultural scenes, expressing the resources and industries of the county. Mr. Dewey has for years promoted the industries of his region and is entitled to a share of the credit for the present prominence of the county.

Alfalfa Haying on the Farm of Mr. J. M. Daggs, Kings County.

THE Santa Clara county hay makers, who propose direct trade with the San Francisco supervisors rather than allowing their product to go through the city hay dealers' association, had a meeting in San Jose on Saturday, as noted in last week's PACIFIC RURAL PRESS. A San Jose paper says thus far five extensive farmers have combined and are heading the movement. They are: E. M. Piercy, Dennis Kelliher, H. W. Edwards, Seely Brothers and Pat Martin. E. M. Piercy, the leader in the movement, declares that they can control over 50,000 tons. A few days ago he wrote to the supervisors of San Francisco, suggesting that in buying direct from the farmers the city could save from $3 to $5 per ton. An answer is awaited, when a price will be set. It is said No. 1 wheat hay can be furnished for $11 and oat hay for a dollar or two less.

THE summer trade in oranges for the East is showing large figures. The San Bernardino Sun says there were 1800 cars of oranges shipped from the five districts of the Southern California railway last month and there will be about that amount handled this month.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 22, 1901.

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The Week.

The longest week of daylight in the year comes with rather low temperatures and fogs almost to the point of showering along the coast. The moderate heat and freedom from scorching winds are still working well for the finishing of the grain crops. Hardly ever is so good a crop made upon so short a rainfall as this year, and the distribution and absence of dry winds seem to be the secret of it. The fog will be the making of many beans along the southern coast and prolonging pasturage upon the northern. On the whole, it has been a good week.

It looks as though Eastern shipments of fresh fruits would be less than usual this year, unless some late fruits should help out the total. Cherry shipments have been light and apricots are likely to be largely needed by canners. It seems as though canners will also have to hunt widely for other fruits, and our readers in distant parts need not be surprised if they have to listen to many smooth things from cannery buyers. Fair prices ought to be had by everyone who has good fruit this year.

Two large cargoes of wheat have gone out, but buyers are listless and do not seem to be moved to more liberal views by the unfavorable reports of European harvests. Spot wheat is therefore dull and unchanged, except strong milling wheat, which is scarce. Barley is unchanged; receipts are small, but bidding is not lively but fluctuating. Corn is unsettled for large yellow; white corn is scarce and, at the moment, high, with some export demand. Oats are drooping; new oats are arriving. There is nothing doing in beans and old prices are retained. Bran is steady with light stocks. New hay is making the market easier and rather favoring buyers, but prices are unchanged. Fresh meats are in little better tone as the butchers' strike has fallen to pieces. Hogs hold up in sympathy with high Eastern prices; very little local packing is now being done. Fancy butter is firm; other grades easier at the old range of prices. Flat cheeses are firmer while small are easier. Eggs are quiet at the advance noted last week. Poultry is dragging, with much Eastern arriving. Potatoes are doing very well for the season, as a northward export demand is helping. Onions are also being shipped in a small way, but they are slow and easy and a shade lower owing to increasing arrivals. Early fruits are in excess and going low, except currants and cherries, which are selling well. Melons are also selling at high rates, with few receipts. Oranges are in bad shape, in competition with the bulk of cheap early deciduous fruits. Lemons are quiet and barely steady. A few dried apricots are reported sold at 8@8½c, but some are holding out for 10c., and others will not make a price yet. Prunes are moving and prices show an improving tendency. The Cured Fruit Association is preparing to ship twelve carloads of prunes to Hamburg, Germany, where they have been sold on a 3-cent basis. The Raisin Growers' Association is considering the disposal of 750 carloads which remain over from last year's crop. Packers are invited to submit bids for the entire surplus for seeding purposes. Wool is quiet, as buyers are busy in the country. Honey is rated so low here that little is arriving.

According to the statistician of the Department of Agriculture, California will have no reason to be ashamed of her grain totals after this harvest.

Long Distance Farming.

At the request of an Alameda county subscriber we find room in this issue for a sketch on farming policy in which agriculture is projected along the lines which are leading to the organization of trusts in other industrial efforts. The article is certainly striking and interesting and likely to excite much interesting discussion. We count the proposition practicable, but conditioned upon things which do not appear in the writing unless one is careful in reading between the lines. It would not be modest for Mr. Allerton to give his inmost thoughts as to the reason of his success, but if the reader does not discern them the suggestions will be dangerous rather than edifying. The whole success of the proposition in our view rests upon the man who is architect and manager of the enterprise. It does not rest upon methods—methods are but the manifestation of the man. If any one should get the idea that large farming can be profitably done merely by the organization or systematization of it he would soon find that the richest lands, the most desirable crops and the most admirable arrangements for communication and transportation will avail nothing for profit. We object to the writing because it may lead the careless reader to conclude that these are the things essential to success while they are merely means to a successful end or a disastrous failure according to the use made of them. After all the means and agencies are collected into their best and most available form it will rest with the genius presiding over them that they avail anything. It will be the man behind the agricultural gun who is the real thing in the success of the affair. All trusts or combines are thus conditioned and collected agricultural producing force and agencies must come under the same rule.

Many readers may read the sketch of Mr. Allerton and proclaim it all stuff and nonsense. They have evidence which satisfies them that farming directed by city people is prone to fail and the larger the area and the capital at the command of the manager the greater the failure will be. It should be remembered that these failures have not been for lack of proper system of communication or accounting or sale of products. They have failed because of the agricultural ignorance of those who have lost their own or other's money in such ventures. Investments made upon visions or conjectures and management dictated by misconception and conceit, have brought the city farmer to grief and made his name a byword in many communities. He may have been a very acute and competent man in certain lines of effort which brought him success through the lessons of his training and experience, but he is likely to make a fool of himself in his agricultural ventures because of his ignorance. For this reason we generally advise people against absentee farming. The proposition of Mr. Allerton is very different. It proceeds upon the very fullest knowledge of soils and crops and markets and it will succeed on that basis because of the perfect system and timeliness in which such knowledge is applied.

Of course no reader will think of taking Mr. Allerton's choice of crops as suggesting a method for this side of the country. Rotation and diversification here must proceed with other factors. It is only his conception of proper policy in a variety of products which is locally applicable and valuable.

The Working of the Paris Green Law.

The operation of the Paris green law passed by the last Legislature, and of which the full text was given in the PACIFIC RURAL PRESS of April 6th ult., is a matter of much interest and importance to the fruit growers. So far as our observation goes, the manufacturers and dealers have generally manifested a commendable spirit to conform to the requirements of the law, and so far good has resulted. There are, however, occasionally cases in which evasion, either through misapprehension or otherwise, has resulted, and it is necessary that these should be prevented. An instance of this kind comes to our knowledge which it is timely to describe.

The new law requires two important things: That Paris green, when sold as an insecticide, "shall contain at least 50% of arsenious oxide and shall contain not more than 4% of the same in the uncombined state," which means that there shall be ample poisonous qualities, and that the same shall be in a form innocent of injury to the foliage. If the latter is not assured, the grower must forsake the use of Paris green and adopt a safe formula for the use of white arsenic, which is cheaper, but requires more time and trouble on the part of the user. There are evident advantages in using Paris green simply suspended in water, and this can be safely done when the amount of free arsenic is within the limit imposed by the law. The manufacturer and dealer are required to make the user safe in this particular. A case of transgression in this matter affords the occasion for this statement.

A horticultural commissioner in one of our leading apple growing counties found Paris green on sale in his locality which contained a label purporting to give an analysis by the University Experiment Station, in which the percentage of total arsenious oxide was given as above 50%; but the label did not give the percentage of free arsenic, as the law requires. He secured a package and sent it to the University for examination. When received there, it appeared at once that the dealer had smartly used as much of the analysis as he thought to be to his advantage and omitted the item of uncombined arsenic, which is just as much required by the law as the other. On analysis of the contents of the package it was found that there was present 16.9% of uncombined arsenious oxide, which is more than four times the amount the law allows. Upon the ascertainment of this fact, Prof. Hilgard wrote to the dealer, who was thus placing an unsafe article upon the market, as follows:

I write to notify you that we have received from a consumer a one-pound package of Paris green, sold by you, bearing a paster giving our analysis of a sample of Paris green sent by you, stating the total arsenic found as being above the legal requirement, but omitting the statement of free arsenic, which we reported to you as being over four times the legal limit. It is thus clear that you have sold this package in violation of the law, and in addition have made use of our analysis, in a garbled form, to further the sale of the unlawful material.

I confess to considerable surprise at this lapse on the part of so reputable a house as yours. As you know, it renders you liable to prosecution and fine, and I trust you will render unnecessary a public disclaimer of the analysis as stated on your paster by a prompt withdrawal of the objectionable material from the trade.—E. W. HILGARD, Director California Experiment Station.

This notification had the desired effect. The transgressing firm replied that they thought they had a right to give the total arsenic percentage and did not appreciate the importance of the item of the uncombined portion. Had they known this as they now understand it, they would have withheld the article from sale in the first place, and they state that it will not be offered for sale hereafter. The whole affair is a play of "all's well that ends well" so far as this firm is concerned, but there are important lessons in it. The importance of a horticultural commissioner who keeps posted upon current issues and appeals to the University for help in an obscure matter is very clear. The importance, also, of the new law as a means of regulating trade in a substance of the nature of which the user can have no knowledge, and of saving the producers great losses of fruit or time, in addition to his outlay for a material which injures rather than benefits, is also demonstrated by the experience herein described. There has been much interest in the working of the new law, both on the part of growers and of the trade.

QUERIES AND REPLIES.

Apricot Stocks and Pruning.

To THE EDITOR:—Will you kindly give your views on several points in apricot growing, as per enclosed slip?—CITY FARMER, Mountain View.

We append the questions with adjacent answers.

Where it has become apparent (not positive) that the subsoil is sufficiently retentive of moisture to kill young apricot trees on apricot root, is it probable that apricots on myrobolan roots will successfully withstand water where the ground is generally sloping?

Yes.

Can the union of apricot on myrobolan root be relied on for strength of tree and size and quality of fruit?

The union is satisfactory; the tree is smaller; the fruit is all right in size and quality.

For general advantages of apricots on myrobolan root, which variety would be preferable—Royal, Blenheim or Hemskirk?

All these do well on myrobolan; the first two are the most abundant bearers; the latter is a finer, larger apricot, but more shy in bearing, usually.

Could one rely on securing preferred stock of character desirable when the season for planting arrives, or would it be necessary to give the order in advance, and, if so, when?

They are usually carried in stock, but it is almost always of advantage to give your nurseryman an order in advance.

If it becomes evident that the subsoil is of such character as to make the cultivation of apricots in any shape or form inadvisable, what fruit that can be relied on for a comparatively safe future market would be best to plant?

If your soil will not carry apricots on myrobolan, it will not carry anything on that root. Your only alternative is pears.

What is the best time to winter-prune two-year-old apricots?

We would not prune them until the foliage had fallen.

Would pruning of two-year-old apricots in November, before the trees have actually ceased all growth, rob them of vitality to the extent that would interfere with their ability to withstand excessive winter moisture?

It would probably be of some advantage to keep the tree active and to have the advantage of evaporation from the leaves as late as possible.

Does it seem reasonable to conclude that a young tree should not be winter pruned until the sap has fully returned to the trunk and roots and placed it in the dormant condition imposed by nature?

Yes. Young trees retain effective foliage later than bearing trees, and they should be winter pruned later. With bearing trees various other conditions intervene, and pruning may be regulated so as to profit by them.

Injury by Applications to Bark of Fruit Trees.

To THE EDITOR:—I am seeking some information from you, and if you will answer my questions I will regard it a great favor: 1. Do oils, grease or tar do injury if applied on the trunks of trees? 2. If so, in what quantity, or does very little of either effect to a certain extent? 3. If true, in what way? 4. Do either have any effect if applied on a band which is placed around the trunk of the tree, i. e., in case some may drip off the band and fall on the trunk below? 5. If by using a band having a sticky application of compound we can keep the female canker worm moth down, can she do any damage?—READER, Watsonville.

There are certain things about the effect of various applications to the bark of trees which are not fully understood. Heavy non-volatile oils, including various forms of grease, also certain slow-drying, sticky materials, are more or less dangerous to apply directly to the bark. Their effect seems to be more dangerous as the bark of the tree is smooth. Probably on rough bark they might in some cases be used without injury. Pine tar is seriously injurious. It has recently been demonstrated that coal tar can be used on old bark without injury. The injury by these substances is directly proportional to the amount applied. The more complete the covering and the thicker it is the greater will be the injury. It is not demonstrated, so far as we know, just in what way these materials act. In some cases, as in the case of pine tar, there may be a penetration of oils or essences, but in the case of other dense liquids it is believed the injury is done by excluding the air from the portions of bark covering them. It has been fully shown that the applications of any such material to a band surrounding the tree, and not coming in direct contact with the bark, are not injurious, except where the band or covering substance is black, and then there is likely to be bark burning, if the sun has direct access to the black band. Small amounts of substances which might drop from bands would probably not do much, if any, injury. The amount of injury would depend upon the amount of substance which flowed down upon the bark. If the wingless female moth is prevented from access to the twigs of the tree by the use of a sticky band, we do not see how any damage could be done by her offspring, because if she should deposit her eggs below the band the small worms would be prevented by it from reaching the foliage.

For Diabroticas and Prune Aphis.

To THE EDITOR:—Do you know of anything that will kill the ladybug of which I enclose a sample. They are doing a great deal of damage to my apricots; they eat many holes in the fruit when green, which causes them to decay before they ripen. I have a large crop of apricots this year, and would be very glad if you could give me any information as to how I can get rid of the bugs without injuring the fruit. I also enclose a prune leaf, which is badly infected with lice. I have three trees with those on; they have just come this year, and seem to be spreading. —ORCHARDIST, Asti.

What you call the ladybug, which is eating your apricots, is a light green beetle with twelve black spots upon its wing coverings. This is not a ladybug, but is properly called a diabrotica. We know no way in which ripening fruit can be poisoned so as to be dangerous to the insect and safe to the consumer. The insect can be driven out by means of smoke. If damp straw fires are started on the windward side of the orchard the pests will fly away with the wind as the smoke advances. They fly very freely and will probably return, when the smoking will have to be repeated. This is not a very satisfactory prescription, but it is the only one we know for the purpose.

The best treatment for lice on prune trees is a thorough spraying with kerosene emulsion. This should be applied without delay, for the lice will multiply with astonishing rapidity, and, as a result, the eaves and fruit will be covered with smut, the tree will be seriously injured and the fruit rendered unmarketable.

Grevillea Robusta.

To THE EDITOR:—I send a flower from a tree growing on the streets of Woodland. I saw the tree first in Los Angeles, but this is the first one I have seen in bloom. I can find no one who can give me the name of the tree. You will confer a favor upon many if you will give the common and botanical names.—READER, Woodland.

It is the blossom of the Grevillea robusta, or "silky oak" of Australia. In its native forest in the semi-tropical part of Australia it attains great size, being reported as high as one hundred and fifty feet. It grows very thriftily in California and endures a certain amount of frost and drouth, making a very handsome evergreen tree. The only objection which we know to it is that the smaller branches are somewhat brittle and apt to break badly in high winds. The wood is strong and valuable for cooperage in Australia and is also used to some extent for furniture.

Rye Grass.

To THE EDITOR:—I wrote you about two months ago that I had just sown twenty-five acres to rye grass on bottom land that is a little too low for alfalfa. It has stood the overflows remarkably well, some of it being submerged for twenty days. On the highest ground, where the water has not interfered with its growth, it has attained the height of 2 feet and is very thick. How shall I know when to cut it for hay, as I have never seen it grow before? Does it bloat cattle, as alfalfa? Can it be sown with success in winter? If it is allowed to go to seed will it have any bad effect on it afterwards? Would it injure it to pasture it this year? The overflows have packed the ground and there is a good stand.—WILL STROTHER, Salida.

This report quite accords with what we know of this grass as surviving overflow. It will endure much longer submergence than mentioned; we do not know just how long. As the habit of the plant is to make very tough stems it should be mown early: it should be cut early in its bloom and not allowed to stand for the milk or dough, as is the case with grain hay. It does not bloat stock. It can be sown any time in the winter except, perhaps, when the ground is too wet to work well. It germinates and grows at any winter temperature of the California valleys or foothills. If you have the perennial rye grass it will not hurt it to go to seed: in fact the seed as it falls will give you new plants and thicken the stand, but if you have a good stand already the grass should be pastured. It is a better pasture than hay grass because of the toughness of the seed stems.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 17, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather was cool the first part of the week, becoming warmer toward the close. With the exception of northerly winds, which caused slight damage to grain in some sections, conditions have been favorable for all crops, and grain and fruit have matured rapidly. Haying is progressing rapidly and a large crop, excellent in quality, is being harvested. Grain harvest has commenced in some localities. The yield is reported better than anticipated and wheat and barley are said to be of superior quality. Corn, hops and vegetables are in good condition. Deciduous fruits and grapes continue thrifty and citrus fruits are looking well. Fruit drying has commenced. Pasturage is becoming dry and scarce in some places.

COAST AND BAY SECTIONS.

Continued cool weather has been unfavorable for maturing the grain and fruit crops. Heavy frosts have occurred in some of the southern coast counties, causing slight damage to corn, potatoes and other summer crops, but there are no reports of injury to fruit. Grain harvest and haying are in progress and good crops are being gathered. Grain is reported plump and heavy. Prunes are said to be dropping badly in portions of San Benito county. Other deciduous fruits are doing well, but the yield will be light in most places. Grapes are thrifty. Sugar beets, hops and garden vegetables are in good condition. Tomato vines are making good growth. There is a large acreage in Sonoma county.

SAN JOAQUIN VALLEY.

The weather has been more seasonable during the past week than for some time and grain and fruit are ripening rapidly. The grain harvest has commenced in all sections and in some localities much progress has been made. The cool weather during the past two weeks was very beneficial in allowing the heads to fill nicely, and the yield, so far as the harvesting has progressed, has been very satisfactory. Some shipments of grain have been made and the quality is reported good. Peaches and apricots are being marketed and the canneries and driers have commenced operations. The apricot crop is light, but the peach crop will be heavy in some districts, and generally good. Grapes are making excellent progress and indications are that the crop will be large. Olives are reported to be dropping in some sections. Melons are late, but are now making rapid growth. Green feed continues good. Water is plentiful and stock of all kinds are in good condition. Summer-fallowing continues in some localities.

SOUTHERN CALIFORNIA.

The weather has been too cool in most sections for the development of grain and fruit, but favorable for hay making. Beans, sugar beets and corn are looking well. The potato crop will be below average. Vineyards are in excellent condition and prospects are good for a large crop of raisins. The apricot crop will be the lightest for several years. Peaches will yield a fair crop. Oranges and lemons are doing well. Walnuts are advancing favorably and promise a good crop.

EUREKA SUMMARY.—Warm weather and fog the latter part of the week greatly improved the condition of corn, potatoes and fruit. Hay harvest continues. Cherries are ripening.

LOS ANGELES SUMMARY.—Beans and beets are looking well; also crops where there is ample water supply. Bees working on white sage in the mountain sections.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 19, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka	.00	47.52	50.46	44.19	62	48
Red Bluff	.00	24.63	23 34	26 49	94	48
Sacramento	.00	20 21	20.24	20.27	92	52
San Francisco	T	21.17	18.47	22.44	76	46
Fresno	.00	11.31	10.27	8.84	100	50
Independence	.00	5.87	3.69	4 66	88	44
San Luis Obispo	T	31.13	17.21	16 80	84	40
Los Angeles	.00	16 28	7.91	17.24	82	50
San Diego	.00	11.43	5.97	9.43	70	56
Yuma	.00	3.60	1.29	2.89	100	58

THE VINEYARD.

Resistant Vines.

By FREDERIC T. BIOLETTI, in Bulletin 131 of the University of California Experiment Station.

The most satisfactory method of combating phylloxera is the use of resistant vines, because it is applicable to all conditions and is the most economical in the end. A resistant vine is one which is capable of keeping alive and growing even when phylloxera are living upon its roots. Its resistance depends on two facts: First, that the insects do not increase so rapidly on its roots; and, second, that the swellings of diseased tissue caused by the punctures of the insects do not extend deeper than the back of the rootlets and are sloughed off every year, leaving the roots as healthy as before. The wild vines of the Mississippi States have evolved in company with the phylloxera, and it is naturally among these that we find the most resistant forms. No vine is thoroughly resistant in the sense that phylloxera will not attack it at all; but on the most resistant vines the damage is so slight as to be imperceptible. The European vine (Vitis vinifera, L.) is the most susceptible of all, and all the grapes cultivated in California, with a few unimportant exceptions, belong to this species. Between these two extremes we find all degrees of resistance, which is expressed by a series of numbers ranging from 20, indicating the highest possible resistance, to 0, indicating the utmost susceptibility. The following table shows the resistance (according to Viala and Ravaz and other authorities) of some of the best known species and varieties:

COMPARATIVE RESISTANCE TO PHYLLOXERA.

Species (Wild Vines):	Resistance.
Vitis rotundifolia	19
Vitis vulpina (riparia)	18
Vitis rupestris	18
Vitis Berlandieri	17
Vitis æstivalis	16
Vitis labrusca	5
Vitis Californica	4
Vitis vinifera	0
Cultivated Varieties and Hybrids:	
Gloire de Montpellier (riparia)	18
Riparia × Rupestris 3309	18
Rupestris Martin	18
Rupestris St. George	16
Riparia × Solonis 1616	16
Solonis	14
Lenoir	12
Isabella	5

The degree of resistance necessary for the production of good crops varies with the character of the soil. The resistance expressed by the numbers 16 to 20 is sufficient for all soils. A resistance of 14 or 15 is sufficient in sandy and moist, rich soils, where the vine can readily replace the rootlets as fast as they are destroyed. Fairly successful vineyards have been established exceptionally with vines having a resistance of less than 14; but, as the vines become old, the lack of resistance is generally shown by a weakening of the vine and a falling off of the crop. Many vineyards in the south of France grafted on Lenoir which formerly bore well, have now to be doctored with injections of bisulphide. For this reason it is advisable to reject all vines with a resistance of 13 or under, especially as vines with greater resistance can now be obtained for practically all conditions.

Resistant vines are of two kinds: (a) Those which are grown for the grapes they produce. (b) Those which are useful only as stocks on which to graft the non-resistant varieties. The former are called "direct producers," the latter "resistant stocks."

(a) DIRECT PRODUCERS.—When the phylloxera commenced to destroy the vineyards of Europe, the natural attempt was made to replace them with the varieties of vines which had proved successful in the United States, where the insect was epidemic. These varieties, however, all proved unsatisfactory. Some, like the Concord and the Catawba, were insufficiently resistant, and although they could be grown where the severe cold of winter impeded the prolificness of the phylloxera, they quickly succumbed in the milder grape-growing countries of Europe.* Most of them were poor bearers, compared with the prolific European vines, and finally the character of their fruit differed so widely from what Europeans were accustomed to that there was little sale for the fruit, and the wine could compete with only the very poorest quality of Vinifera wines and brought a very inferior price. A few of the varieties introduced during that first period are still grown to a limited extent in France, chiefly the Othello and the Lenoir. They are being gradually abandoned, however, as their crops are unsatisfactory, and in many cases can be maintained only by the aid of injections of bisulphide. For some years the search for a suitable direct producer was almost abandoned by practical men, the use of resistant stocks having been so fully successful. Lately, however, renewed efforts have been made and several new direct producers are being advocated and planted to some extent. The merit of these new varieties, however, is chiefly their resistance to peronospora and black rot. Phylloxera resistance is considered of much less importance by their most ardent advocates, and indeed the advice is given to graft some of the best of these direct producers upon phylloxera-resistant stock. The main importance of these facts to California grape growers is that they hold out hopes of permanent prosperity for the wine making industry here, where, owing to the dryness of the climate, there is no likelihood of trouble from these serious fungus diseases of the grape, which threaten to make the growing of Vinifera varieties impossible in many parts of Europe.

* In California these and other Labrusca varieties and hybrids resist very little longer than Vinifera vines.

Vitis Vulpina (Riparia). Typical wild vine from North America. (Resistant.)

Vitis Vinifera. Wild vine from the Caucasus. (Non-resistant.)

(b) RESISTANT STOCKS.—Though resistance to phylloxera is essential in a grafting stock, there are other characteristics equally necessary. The Rotundifolia (Scuppernong), which has the highest resistance of any vine, is useless as a stock on account of the impossibility of grafting it with any Vinifera variety. This is due to a lack of affinity, which means a lack of similarity in structure and composition between the tissues of the stock and those of the scion. This lack, in extreme cases, results in an imperfect and temporary union, but, when not excessive, only in a slight degree of vigor. The affinity is not perfect between Vinifera varieties and any resistant stock, but in the case of Riparia and Rupestris is generally sufficient to insure permanence to the union, and the slight degree of vigor consequent often results in an increase of fruitfulness. It is for this reason that certain varieties when grafted on resistant stocks, especially on Riparia, often bear larger crops than when grown on their own roots. Not all varieties of Vinifera have the same affinity for the same stock. For this reason it is desirable to be cautious about making new or untried grafting combinations on a large scale. Some varieties, such as Carignan, Petite Sirah, Clairette and Cabernet Sauvignon, do excellently on all stocks; while others, such as Mondeuse and Gamay, do not make a very good union with any of the thoroughly resistant stocks. The Petit Bouschet and Cinsaut make very poor unions with any variety of Riparia, but do fairly well upon Rupestris St. George, but bears much more prolifically upon Riparia Gloire; while the Mataro does not bear upon Rupestris St. George and makes poor unions with Riparia Gloire.†

SELECTION.—A very serious defect of many resistant stocks is a slender habit of growth. This is true of most of the vines found growing wild, and cuttings from such vines make poor grafting stock for the stout Vinifera varieties, which will produce a trunk 4 inches in diameter while the stock is growing only 2 inches. This is particularly true of the wild Riparias. For this reason great care has been exercised in selecting the stronger-growing forms, and at present we have selected Riparia varieties which almost equal Vinifera in the stoutness of their trunks. The best of these are the Riparia Gloire de Montpellier and the Riparia Grande Glabre, the first of which has given the best results in California.

ADAPTATION.—The European vine is remarkable among cultivated plants for the wide range of soils in which it will succeed. We find vineyards producing satisfactory crops on the lightest sands and on the heaviest clays, on the dry hill tops and in the low, moist plains. This is not the case with resistant stocks. Some, such as the Rupestris varieties, are suited to the driest soils; others, like the Riparia varieties, grow well only on rich, moist soils. The question of the adaptation, then, of resistant stocks to various soils is of the greatest importance if we are to obtain the best results.

After rejecting all unselected and unnamed varieties, such as the ordinary Rupestris and Riparia, which have caused so much disappointment and loss on account of their poor growth, and all insufficiently resistant varieties, such as Lenoir, which have succeeded only in the richest soils, our choice of a resistant for a particular soil, climate and scion must depend on its qualifications as regards affinity and adaptation.

† "Reconstitution du Vignoble," par P. Gervais, 1900.

After testing hundreds, if not thousands, of varieties and hybrids originated in Europe and America, a few have been selected as the best for practical purposes. In France a fairly good resistant stock has been found for nearly every soil. In California little systematic work has been done in this respect, and we still have the intricate problems of adaptation to solve for most localities. We can, however, profit to some extent by the experience of Europe, and some of the best varieties have been partially tested here and give great promise.

For the driest soils, on hillsides with a southern exposure, the Rupestris Martin is the most promising variety. Though not quite such a vigorous grower as the St. George, it has greater resistance to phylloxera, and, where grafted, has given equal, if not superior, results. Where the soil is somewhat compact, the Rupestris St. George is to be preferred; but neither of them should be planted where, on account of an impervious subsoil or a high water table, deep penetration of the roots is impossible.

For very shallow soils no resistant has been found that gives perfectly satisfactory results; but in such situations Riparia often does better than Rupestris. Where ground water is too near the surface, Rupestris is liable to fungus root rot. Near Mission San Jose there are vineyards on rolling hills where the soil consists of a layer, from 2 to 4 feet thick, of the heaviest black adobe, underlaid by a sandy subsoil. Here Riparia has grown more vigorously and produced better crops than Rupestris. The subsoil, though easily penetrated by vine roots and favorable to their growth in normal seasons, loses its water, which is taken up by the more hygroscopic clay in dry years. In such conditions the deep-rooted Rupestris suffers, while the Riparias, with all the roots in the adobe, remain vigorous.

For loose, moist soils on northern slopes, and in those situations where a horizontal root development is desirable or permissible, the Riparia Gloire de Montpellier is extremely promising. It should be planted wherever Riparias of any kind have proved to do well, as in certain soils and locations in the San Francisco bay region, and in the sub-irrigated soils of parts of the San Joaquin valley. Other very promising resistants are certain hybrids of Rupestris and Riparia, which in many ways combine the merits of both species. Of these, Riparia × Rupestris 3309 and Riparia × Rupestris 101[14] have given the most favorable impression in California. They are strong, vigorous growers, with a greater range of adaptation than the pure species, and a resistance to phylloxera equal to that of Riparia Gloire.

DISINFECTION OF CUTTINGS.—The simplest and most effective method of treating cuttings suspected of being infected with phylloxera is to expose them to the fumes of bisulphide of carbon. The treatment with liquid insecticides is not nearly so reliable, as Prof. Hilgard pointed out many years ago, on account of the difficulty of wetting the buds of many varieties, owing to their protective covering of woolly hairs. Some fear has been expressed that the poisonous fumes would injure the vitality of cuttings, but Prof. Hilgard demonstrated in 1881 that Zinfandel cuttings, kept for twelve hours in an atmosphere saturated with the fumes, showed no signs of injury, and grew as well as untreated cuttings. Recent tests with resistant cuttings, Riparia and Rupestris, indicate that they can be treated with equal safety, for even after twenty-five hours' treatment they were not killed, though their slowness in starting and callusing indicated that they were injured. After five hours' treatment, Rupestris St. George cuttings were uninjured and sent out roots and buds vigorously and rapidly. A large lot (about 4000 cuttings) of Rupestris St. George, Rupestris × Riparia 3309, Riparia Gloire and Solonis were exposed in a saturated atmosphere of carbon bisulphide for seven hours, and at the present time they are rooting and show no signs of injury. As Prof. Hilgard's experiments in 1871 showed that one-half hour exposure was sufficient to destroy the summer eggs of the insect, the time latitude is quite sufficient for safety, even for the winter egg.

The method of using the bisulphide is as follows: Place the cuttings in a barrel, vat or box, made tight by means of a thick coat of paint, or of paper pasted on the inside. On top of the cuttings place a saucer or other shallow dish, into which pour the bisulphide of carbon. An ordinary saucer will hold enough for a box 3 feet cube or a 200-gallon vat. For larger receptacles it is better to use two or more saucers. Deeper vessels will not do, as the saturation is not sufficiently rapid. After pouring the bisul-

phide into the saucer, cover the box with an oiled canvas sheet or other tight-fitting cover, and allow to stand from forty-five to ninety minutes. At the end of this time there should be a little of the bisulphide left. If it has all evaporated this is proof that insufficient was used. No flame lights should be used, as the liquid burns easily and the fumes form an explosive mixture with the air. Care should be taken not to spill any of the liquid on the cuttings, as it may kill them. It is advisable to cut off about half an inch on the lower end of the treated cuttings before planting, as the vapor injures the open pith.

Besides disinfecting the cuttings in this way, all the packing material in which they come should be burnt, or, if valuable, dipped in boiling water. Practically, it is impossible to disinfect rooted cuttings satisfactorily, on account of the difficulty of killing all the phylloxera without seriously injuring the vine roots.

THE FIELD.

Business Methods in Farming.

TO THE EDITOR:—I wish you would read the article on "Business Methods in Farming," in the Philadelphia Weekly Saturday Evening Post of June 8, and publish it in the PACIFIC RURAL PRESS. I suggest this because I think it a good thing for California farmers to read.—SUBSCRIBER, Fruitvale.

No man is entitled to a serious hearing on the subject of farming unless he proves his faith by his works. "Do you run a farm yourself?" and "Do you make it pay?" are the questions to be put to every man who has any advice to offer about farming. If he can't answer yes to both these questions, his talk is mere theory and not worth listening to. If theorizing would raise crops, we should have to go to college class rooms instead of to the fields for grain on which to feed the world. But it won't, and there is no use in giving serious attention to any talk on this subject that is not backed up by sound results, of a broad, practical sort, which have been personally obtained by the man making the suggestions.

First, then, I shall give a reason for the faith that is in me, and shall state something of my experience as a farmer before I ask any reader to accept my statements and give them any weight or practical consideration. My system of farms contains something more than 40,000 acres under careful cultivation and an equal amount in grass. These, it should be clearly understood, are not ranches, but farms. The farm houses covered by insurance number about seventy. While these farms are, in one sense, managed at long range, they are "personally conducted," as the tourists say. The entire system centers right here in my Chicago office, and every crop is as much under my personal direction as if I followed the plow, seeded the land and went into the harvest field myself.

So much for the question of practical personal experience in farming on a large scale.

FARMING THAT PAYS LARGE DIVIDENDS.—Now about the results. Does my farming pay? Yes; and well, too. For the sake of definiteness I can say that in one year from a farm of 3600 acres I have made a net profit of $37,000. This tract of land cost me but $70,000. It was bought at a time when faith in farm values was low, and when the young men of that region, at least, were in a hurry to get away from the farms into the big cities, where they would have a fair chance to make their fortunes.

Whether there is a good, big future in farming—enough to satisfy any young man with a healthy ambition to get to the front and have a fortune—is well answered by the fact that quite recently three farmers in central Illinois left, at their death, fortunes of more than $3,000,000 each. This wealth was made in farming.

In the same general region I can find scores of farmers who are worth from $100,000 to $500,000. These are the straws which go to show that farming can be made to pay on a big as well as a small scale, and that it offers a satisfactory field of operation for the millionaire as well as the thrifty immigrant.

How can a large system of farms, scattered over three States, be managed from an office in a big city? By system. Lack of system is the curse of the average farmer. He may, and generally does, practice all manner of petty and exacting economies, but he will never do things on a large scale until he systematizes his entire scheme of operation. This means that he puts his economies and his activities on an automatic basis. Once established, they go on with their work in a mechanical way, leaving the man at the head free to do the thinking for the enterprise in a big way—if he is capable of it.

One of the most important things in running a string of farms is the long-distance telephone. It would be almost impossible to do farming on the syndicate plan without this means of quick communication. Suppose there is a sudden bulge in the market for corn, wheat, hogs, sheep or cattle. By the telephone I can instantly discuss shipments with the foreman of every one of the farms. This ability to move produce into the market on quick notice and thus get the benefit of a high figure means thousands of dollars in additional profits each year to the man who has a large number of farms under his control.

Chicago is the center of the grain and live stock trade of this country, and the advantage of being situated right here where the world's prices are made is great. Of course, we have a man who is at the stock yards all the time, keeping a close eye on the prices and buying or selling as our needs and advantages dictate.

Another end served by this quick communication from one central metropolitan office is that of having a means of meeting crop exigencies due to sudden and radical changes of weather. The man in Chicago, only a block or two distant from the Auditorium tower, is closer to the source of the weather supply than the man out on the farm. The latter knows only whether it is locally foul or fair for the moment; but here there is a chance to chat with Old Probabilities and thus to secure a better guess as to future conditions of drought or rain, wind or calm. The difference of a day in putting in a crop sometimes determines the success or failure of the yield. So as to the time for harvesting.

Then, this centralization of control in an office in a big market city gives a distinct advantage in securing quick shipping facilities. When it becomes necessary to get a large amount of produce into the market on short notice, in order to secure the benefit of temporary high prices, things can be accomplished by the large shipper that could not be done by the small farmer. He can go, without the loss of a moment's time, to the general freight agent or other railroad official, and negotiate directly and personally for special facilities out of reach of the man on the farm. All these things count when the balance is struck.

Again, the system I have outlined makes possible large economies in buying. It stands to reason that the man who buys binding twine for the harvesting machines on fifty farms can secure a lower figure than one purchasing for a single farm. This applies to every kind of supply used in farm operations.

One of the biggest problems of farm management is, of course, the distribution of crops. Whenever this question comes up among farmers there is always a great deal of wise talk about "crop rotation." Sift this down to the bottom and it will be found, in most cases, that farmers understand this term to mean sowing a field to oats one year and wheat the next—alternating these crops indefinitely, year after year. Here is where the chief mistake is made. They do not make provision for giving their ground a chance for rest and enrichment. They do not plan to return anything to the soil. Every field used for wheat, corn and oats should have a season's rest once every three or four years. Give each field a chance to serve as pasture land as frequently as this, and it will pay big returns in rich and heavy yields. Managed on this plan, by a man who has any knack as a corn raiser, any average Illinois or Nebraska field should yield from seventy-five to one hundred bushels of corn to the acre.

About thirty years ago I began farming on a tract of 100 acres on the banks of Seneca lake, in New York. In three years I saved $3200 from the farm and had a good living besides. It was there that I demonstrated the principle of the rotation plan which I have since followed on a larger scale. From that time until the present I have been constantly buying farms and operating them, and have yet to make the first unprofitable investment. This is why I have little patience with the man who, under average conditions, declares that there "is nothing in farming." Men who talk in this strain are those who are satisfied to get a yield of thirty-five bushels of corn or oats to the acre, when they should know that their management is at fault if they fail to produce an average of less than seventy bushels of either to the acre.

PROPER ALLOTMENT OF A FARM.—Here is my allotment for a farm of 160 acres: Ten acres for buildings, garden patch and a field for mangel wurzel beets; sixty acres for pasture; sixty acres for corn; thirty acres for oats. In the second year these crops should be shifted, pasture and grass lands being turned over for cereals. The beets should be fed to sheep and hogs, and as much will be realized from the sale of wool, lambs and hogs, under this system, as would otherwise be secured from the entire product of the farm.

The showing made by an intelligent following of this plan should be fully as good as this:

From sale of wool	$ 100
Lambs	500
Hogs	500
Corn	900
Oats	200
Total	$2,200

This allows for feeding 1500 bushels of corn out of a crop of 4500 bushels, the corn being figured at 30 cents a bushel and the yield at seventy-five bushels an acre. The number of lambs in this estimate is 100, and hogs fifty. Placing the farmer's outlay for expenses at $700, this leaves him $1500 clear. I believe this to be a very conservative estimate of what any good farm may be made to pay, for I generally exceeded this figure in the net results of my farming.

On the 3600-acre farm to which I have alluded the allotment followed is this: 1800 acres in corn, 900 in rye or oats, and the remainder in pasture. We keep 350 cattle, and sell from $8000 to $10,000 worth of hogs.

Each farm has its foreman, whose duty consists in seeing that the central office is always intelligently informed of all local conditions and affairs and that orders are promptly and efficiently carried out. All the expenses are paid by draft through the local bank. This transfers the detail bookkeeping to the central office and relieves the head farmer of clerical burdens. His only care in this particular is to see that he has a proper voucher for every item of expense and that this voucher is forwarded in the regular routine of business.

HOW TO GET GOOD WORKERS AND FOREMEN.—There is no difficulty in getting good foremen and good hands so long as they are given the right kind of a chance to make something for themselves and to live in comfort. The foreman of my largest farm is worth $16,000, and lives in a degree of comfort that some city men who make almost that amount every year can't provide from their incomes.

First of all, the houses are kept in good repair and especial attention is paid to the kitchens. Everything within human reason than can be done to make the houses convenient for the wives of the farmers is done. Then each family is furnished with a certain number of cows. If these yield more butter than is required for the household, the farmer is free to sell the surplus. The wives and children of the men who run these farms are given all the poultry they can raise. These privileges are appreciated, and go to make the foreman, the hands and the tenants, together with their families, contented with their lot and eager to keep their places.

Orchards are planted on these farms, together with small fruits, and there is every encouragement to have large gardens and to keep them in good condition. Men who are well fed, having a tempting variety of the delicacies of the season, will thrive and work well where a plain and monotonous bill of fare would produce grumbling, discontent and a constant change of help.

There is not a farm in the whole system that hasn't in its equipment an extension-top buggy, and some have more than one, according to the number of young men employed. The horses which are driven before the carriages are equal to the ones owned by the sons of neighboring farmers who work their places instead of being in the employ of a "Chicago capitalist." Here is another instance in which small expense and a little thoughtfulness work large results in loyalty and contentment.

Quite as important to the welfare of the employes and the tenants of the farms as orchards, gardens, dairies, poultry and top buggies are good district schools. If there is not a "little red school house" on or very near a farm that comes into my possession, I see to it that the authorities are offered a gift of ample ground on which to build one. On one occasion, after repeatedly pressing an offer of this kind, my foreman was asked:

"Why is that capitalist boss of yours so anxious to build a brick school house? It will simply increase his own taxes, and he will get no benefit from the improvement, having no children here to attend school."

As the foreman was a bright Irishman, he had a ready answer: "Because he thinks more of your children and their chances in life than you do yourselves!"

The school house was put up on the strength of that argument, and is now well filled and helping to make good, intelligent citizens of the children who live in that region. There isn't a more important building on any farm than the little red school house. Better get along with one less barn or corn crib than leave this bit of architecture out of the landscape.

The district school is the salvation of this country. It gives the children of the common people a chance for a good education, and that country which takes care of this class will keep at the front among the nations.—S. W. ALLERTON.

THE GARDEN.

Cantaloupe Growing with Irrigation.

Colorado has a cantaloupe industry which is famous in all horticultural circles. The melon grown in the Arkansas valley has peculiar excellence, and is known as the Rocky Ford, because that town has led in the business. The variety is the Netted Gem, locally improved by selection and favoring environment. Last year 780 carloads were shipped and the business is said to cover about 2500 acres. The Colorado Experiment Station at Fort Collins has just published an interesting bulletin on the cantaloupe, describing local methods, which will be suggestive to other regions in which the crop is carried by irrigation. It is written by Mr. H. H. Griffin:

CULTIVATION.—The first planting is done from the 1st to the 10th of May; seldom any advantage is gained by putting the seed in earlier than May 1st. The land is put in good condition by rather deep

plowing, harrowing and leveling. Furrows are then run with a shovel plow from six to seven feet apart and the seed planted by the side of the furrow, making the hills from five to six feet apart in the rows. Uniformity of planting facilitates cultivation, as for a considerable time the field may be cultivated in both directions. Care must be exercised not to plant the seed too deep. The depth should not exceed one inch. Some growers irrigate the furrows and plant afterwards, while others plant and then irrigate, permitting the water to reach the seed by percolation. I prefer sub-irrigation to germinate the seed, as the soil is apt to become crusted and dry if it is handled and pressed after irrigation.

Plenty of seed should be used—from ten to fifteen seeds to each hill—and when the plants have put forth four leaves, thin to three plants for each hill. Cultivate and hoe sufficiently to secure good tilth until the vines run well, or are from two to three feet across the hill. Then the irrigating furrows should be run and cultivation cease, giving such hoeing as will keep down weeds.

SEED.—Good seed is a prime requisite for success with the cantaloupe, but not enough attention has been paid to the selection of it. Few have made any systematic selection of seed, looking well to the shape, size, solidity, depth of flesh, seed cavity, color of flesh and quality. Many have bought from dealers who knew little of the quality of seed sold, and the result is that many melons sold as Rocky Ford are not up to the standard. The effect of poor seed is more apparent in those districts in which there are many amateur growers than where the older growers predominate.

A pure Rocky Ford cantaloupe when ripe should have a silver-colored netting which is lace-like in appearance. The skin should be green, turning to a peculiar gray color when the melon is fit for shipping. The flesh should be green in color and so sweet and luscious that it may be eaten close to the rind. The melon should have a small seed cavity and the portion of the flesh immediately surrounding it be slightly tinged with yellow. The melon should weigh about one and one-half pounds and be very solid and firm.

The cantaloupe growers should save seed from the very best melons, for in this way only can the quality be maintained or improved. No grower should save seed for his planting without testing the quality of the melon. Occasionally a melon may be perfect in appearance, but not of first-rate quality.

HARVESTING.—Much seed is shipped to points outside the State, and the product from this seed is shipped to market as Rocky Ford melons. Rocky Ford melons, so called, are on the market about the time the melon is setting on the vines in the Arkansas valley. A few melons are shipped the first week in August, but heavy shipments do not commence before the middle of the month. The melons are picked into sacks, carried over the shoulders of the pickers and are at once taken to the shade—packing sheds being made for the purpose—where they are crated. The standard crate holds forty-five perfect melons, in three tiers of fifteen melons each, and weighs about sixty-nine pounds. There are also used, to some extent, the two-layer crate, which is two-thirds the size of the standard, and the "pony" crate, holding forty-five melons, but smaller than those of standard size. The standard crate is (inside measurement) twenty-two inches long, twelve inches wide and thirteen inches deep.

When it is proper time to pick for shipment, the stem slightly parts from the melon. No stem tissue should adhere to the melon, but there should be a smooth surface where the stem was attached. The netting and skin have a peculiar grayish appearance, which is easily distinguished when one becomes accustomed to picking.

The cantaloupe is very perishable, and rapid transportation in refrigerator cars is required. By this means melons of good quality are placed in all of the markets of the Eastern States. The shipping period (from the same vines) should extend over not less than thirty days; a more rapid ripening than this is generally indicative of unhealthy conditions. As high as 300 crates per acre have been taken from alfalfa sod, but 100 to 150 crates of marketable melons per acre is considered a good yield.

IRRIGATION.—The essential thing in irrigating is to keep the water confined to the furrow, reaching the roots only by percolation. This keeps the soil in good condition, does not cover the vines with mud, and leaves the fruit in dry condition. If the water stands on the fruit, it is apt to induce decay or cause uncolored or soft spots, which make the product unsalable. It is common to irrigate every ten days, paying little attention to the needs of the plant. The tendency is to irrigate too often early in the season.

The most water is required about the time the blossoms commence to set well, previous to this giving only enough to keep the plant growing well. When the plant commences to bloom profusely, irrigate thoroughly and afterwards give only so much water as will keep the plant in good, thrifty condition. A too moist condition is apt to increase the spread of any fungus trouble.

In 1899 three plats were used to test the effect of irrigation on quality and production. One plat had seven irrigations—June 19, 30, July 10, August 1, 17, 26 and September 4; another three irrigations—June 30, August 1 and September 4; a third plat had one irrigation—July 10. Heavy rains occurred in July, and considerable rain fell in August.

The plat irrigated but once did not yield so heavily as the others; the vines and fruit were smaller, but the fruit was of better quality. The plats numbered one and two yielded about the same, and, as far as could be judged, the quality was the same. Evidently, plat No. 1 received twice as much water as was necessary.

FERTILIZERS.—Virgin soils produce good melons both in quality and quantity, but fertilization is soon a necessity. Since fungus troubles have become annoying, it is not advisable to apply any heating manure to the soil just previous to growing cantaloupes, as it has a tendency to increase the trouble.

A comparative trial in 1899 with melons grown on alfalfa sod, on cropped land manured with well-rotted barnyard manure in the hill and on cropped land fertilized with bone dust in the hill showed the best results from the alfalfa. The product was nearly doubled, the quality was better and the ability to resist fungus troubles greater. Alfalfa sod brings maximum returns, and in turn the melon easily subdues the alfalfa and puts the land in splendid condition for succeeding crops.

TRANSPLANTING.—A test was made in 1899 to note to what extent hot-bed propagation may hasten maturity and how successfully it may be performed. The seed was put in the hot beds April 3rd. Some of the seed was put in cans, so arranged that the plants could be taken from them without disturbing the roots, while others were put in the bed without any support. It was found quite difficult to transplant them when the roots were at all disturbed. Fully 95% of those set from the cans grew, while only about 50% of those taken from the bed without support survived. The first plants were taken from the bed May 8th and set in the open field. The first seed planting in the open field was April 29th and the second May 10th.

The first ripe melon was taken from the transplanted vines August 17th—only one day earlier than melons grown on ground fertilized with alfalfa or manure and only four days earlier than those grown without any fertilizer. However, they ripened (in quantity) faster, and for the next ten days gave more ripe melons than any other planting.

HORTICULTURE.

The Germans Puzzled Over Blood Oranges.

Consul Hughes reports from Coburg, April 26, 1901, something which will make our orange growers smile:

There is a great demand in Germany for the so-called "Italian blood orange." The popular idea here is that this fruit is colored, not by nature, but by injections of some artificial vegetable dye. To discover the truth or fallacy of this belief, several well-known German chemists have been experimenting, first, to find out from the blood orange itself if its color is due to artificial means, and, secondly, to change the common Italian orange into a blood orange by injections of different kinds of coloring matter. The experiments, however, have not been attended with success. It was found that no single injection of any solution would color more than one part of the orange, and that if several injections were made, the fruit was likely to decompose very quickly. The theory was then advanced that the coloring was produced by watering the roots of the trees with a blood-red vegetable solution. It is needless to say that this experiment was as barren of results as the first.

A Yolo County Olive Mill.

Mr. De Hurst makes through the Woodland Mail an appeal for more olives. He refers to the olive-oil plant of Morris & Smith, which is at present located 6 or 7 miles north of Woodland. For several years they have been experimenting, but have reached a point where success is assured. They placed their first olive pulp under the press in 1899, and expressed about fifty or sixty gallons of oil of a superior quality. The machinery was rude in construction and of limited capacity, but the results showed them they were on the right track. During the year 1900 they secured better machinery of greater capacity, and set themselves to purchasing olives. They were able to secure only about seventy-five tons, in lots of from two boxes up to nineteen tons. The ripe olives were dried, sacked and stored away in the warehouse. This process is new, the usual way being to express the oil from the ripe but undried fruit. There is a great advantage in the method of drying the berries. The season of drying, storing and making oil may extend through the entire year, and thus gives a steady employment to those engaged. During the drying and storing season ten men were constantly employed. But it requires no great stretch of imagination to contemplate in operation a plant that will handle 1000 tons annually, instead of seventy-five tons, for the capacity of the plant can be made to meet any supply of olives that the surrounding country may furnish. A pickling plant would naturally connect itself with it, and the industry may become a great thing for the city that secures it.

By the courtesy of the proprietors, Mr. De Hurst was recently permitted to examine the plant, and gathered the following data: About fourteen tons of the olives have been ground by a process that does not grind up the seeds, and the pulp placed in the presses. Forty-one filtering cans are running day and night, and about 3000 bottles have been prepared for market, and 2000 of them sold. The oil is of a superior quality, as any one can judge by tasting it. Absolute cleanliness exists everywhere, and the fragrance of the filtering room is as sweet as that of a flower garden. The capacity of the filters is about fifty or sixty gallons per day. One ton of green olives will make about thirty-five gallons of oil. In the curing process the olive loses about one-half of its weight, but it loses no oil, so that a ton of the dried olives will furnish about seventy gallons of oil.

Another Bad Process.

U. S. Consul Freeman of Copenhagen, Denmark, under date of April 22, 1901, says: "I am in receipt of so many inquiries from the United States in regard to the reported discovery of a new and successful process for preserving butter, meat, eggs, etc., that I am led to suggest that notice be given in the Consular Reports that the so-called discovery is a failure. The alleged inventor applied for a patent, but his application was rejected. The sealed package of butter which was presented as a test of the process bore a notary's certificate as having been sealed up in 1900, but it was proved that the butter had been preserved only a few weeks, the date—February, 1901—having been surreptitiously changed to read February, 1900.

THOSE who say that the present high price of beef is a boom proposition may read the following from the Breeders' Gazette: "Why is beef at its present high price? Why do men bid freely for high types of improved animals of the beef breeds? Why are the dairy breeds feeling the awakening? In 1900 we had in this country 10,000,000 less cattle than in 1892. In that time the population increased over 10,000,000. In 1892 we had 826 head of cattle for every 1000 of of population. In 1900 this ratio had fallen to 585 cattle to every 1000 of people. During the eight years intervening between the years named we lost on an average over 1,000,000 of cattle per year. To maintain even our present ratio of cattle to population we must show an increase of about 1,000,000 cattle annually, and when these figures are added together some understanding of the present situation should be easy of grasp by the most misinformed mind."

IT is telegraphed from Salt Lake City that "several hundred cases of apricots, part of a carload received from Marysville, Cal., were found by fruit inspectors to be badly infected with the San Jose scale. The fruit, which was on sale at several stores, was ordered immediately destroyed." We apprehend that this is a case of mistaken identity. The San Jose scale does not take to the apricot. The fruit perhaps has a little of the shot-hole fungus, which makes a reddish spot on the skin which resembles somewhat the spot which the scale makes on the skin of apples and pears—hence the inspectors argue that the spot is the scale. This is an unfortunate mistake, for some one will lose by it; and the Salt Lake people might be having good apricots were it not for their over-zealous inspectors.

OUR northern sister seems to be pushing the horse meat business. An Oregon correspondent of the Breeders' Gazette says: "We have a horse pickling plant at Linnton, Or. They are killing a large lot of horses. The meat goes to the old country. The demand is growing every year. It takes about six horses to fill a barrel. Everything is used for something. Fertilizer is made out of the blood. Every horse has to pass inspection; every piece has a tag on it as to health. All horses that become unfit for service go to the pickle if healthy, otherwise into the fertilizer tanks."

FATTENING steers on alfalfa hay alone gives Fred W. Andrews of Oregon larger returns than feeding alfalfa and grain. He tells the Breeders' Gazette that he has been feeding for several years and finds the average gain to be about 200 pounds for about five months' feeding. He began feeding fifty head steers Oct. 12th last, which were bought by weight, the average being 917 pounds. He sold and weighed the fifty steers Feb. 28th, their average weight being 1240 pounds, making a net gain of 323 pounds, which is a third more gain than in previous years.

A corps of officials of the U. S. Geodetic Survey are measuring the streams in Monterey county, particularly in the Salinas valley, to ascertain the feasibility of extensive irrigation enterprises.

Agricultural Review.

BUTTE.

ONE MAN WHO FINDS RAISING RABBITS PROFITABLE. — Between Honcut and Palermo a gentleman named Shaffer is engaged in raising rabbits for market. They seem to be a cross between the Australian rabbit and the Belgian hare. He has a large number and says they are more profitable than poultry. He ships them to San Francisco, where they meet a ready sale. It is believed they are used largely in making tamales in the city. The meat is delicate and as nice as that of a chicken.

GLANDERS BEING CHECKED. — Willows Journal: The scare among the farmers in the vicinity of Chico that some of their horses were affected by glanders was well founded. Veterinary surgeons have discovered unmistakable evidence of the disease. Several horses have been killed and more will be. The disease was spread by the nag of a Chinese peddler. His horse was the first to get the ax.

FRESNO.

NO WINE-GRAPE POOL THIS SEASON. —Fresno Republican, June 15: There will be no wine-grape pool formed in the colony this season. The California Wine Association will name its price and the growers have no alternative but to accept that price or dry their grapes. The Association is in a position to name any price it sees fit. The vineyards, we understand, are all mapped out among the different wineries of the association. It is likely that the colony growers will meet soon and talk over the situation. They are tired of these yearly conflicts over prices and if things do not go smoothly this year they will have their own winery next season. This is in the air, we hear it everywhere. The colonists have decided to stop kicking and get down to business.

GLENN.

A SERIOUS GRAIN FIRE.—Orland Register, June 15: A fire broke out Thursday afternoon in the grain field of J. M. Harrison, north of Stony creek, and before it could be controlled about 250 acres of wheat went up in smoke. The grain was insured in companies represented by the Bank of Orland. The fire originated from a passing railroad engine.

HUMBOLDT.

DEER RAIDING GRAIN FIELDS.—Humboldt Times: Deer in large numbers are making night raids into the grain fields, gardens and orchards in the vicinity of Upper Mattole.

KERN.

SUPERVISORS COUNT 25,000 SQUIRREL TAILS. — Bakersfield Californian: The chambers of the Board of Supervisors Monday morning had the odor of a zoological garden, because of about 25,000 squirrel tails brought in by those who have demands for their killing against the county. When the doors of the chambers were thrown open men seemed to come from all directions, carrying sacks filled with tails. All other business was laid to one side and the members of the board sat around on the floor and on benches counting the tails. By noon 15,000 had been counted, and at 2 o'clock the work was resumed. In the history of the board the members have not been obliged to handle such a number. A good living, it is said, can be made by those who wish to give their attention to killing the animals. The tails bring 2 cents apiece, or $20 per 1000. It takes about $5 worth of poison to kill a thousand, and this work can be done in two days. Only a little over a third of those poisoned are found, as they crawl away and die in their holes.

LOS ANGELES.

GOOD APRICOT AND PEACH CROP.—Pomona Times, June 13: There are not many apricots this year, but the few there are are exceptionally fine and large, though within the past few days cracking has appeared, which as yet is not extensive enough for serious damage. The cannery expects to start on apricots about the 25th of this month. A bigger pack than ever is expected as the result of this year's work. This means that over 100 cars of canned fruit will leave Pomona. As to improved machinery and facilities for increased pack, the cannery never was in as good condition as now. A new capping machine, which gives a possible increase of 20,000 cans per day, is one of the improvements. But the biggest factor will be the increased room from the buildings erected last fall. The amount of apricots handled at the cannery will be probably not far from 300 tons, while in peaches 1000 tons are expected to go through the house.

ORANGE.

BUMPER YIELD OF SUGAR BEETS.—Ventura Independent: The three sugar factories in southern California will this year have the most prosperous season in their history, and the coming summer campaign promises results scarcely dreamed of a few years ago. Los Alamitos will harvest nearly 60,000 tons of beets.

FRUIT NOTES.—Anaheim Gazette, June 13: David Bertsch, who owns a fine orchard east of town, reports walnuts a light crop on account of the November freeze. He notices that his trees which were plentifully irrigated on account of alfalfa growing between them, and which had in consequence leafed out more than the others, were nipped by the frost, while those trees which were not irrigated, having potatoes growing between them, and being dormant, have produced a good crop and are looking beautiful. The trees which were nipped had to be cut back. Some varieties of peaches have produced a good crop, while other varieties are poor. Apricots are light all over the valley.

RIVERSIDE.

SCARCITY OF FARM LABORERS.—Riverside Enterprise: A representative of the Enterprise, who has been making a canvas through the back country, reports that at every cross-road he was held up by excited ranchers, who wanted him to go to work helping with the harvest. From Box Springs to San Jacinto the farmers are in distress for men to assist in cutting the hay, and everyone who can be hired or coerced into swinging a pitchfork is being conscripted.

SAN BERNARDINO.

THOUSANDS OF ACRES INVOLVED.—San Bernardino Sun, June 16: Attorney Henry W. Nisbet filed a complaint yesterday in the case of Metta Huber and J. H. Huber against the Hesperia Land & Water Co., and though the present suit only involves a few acres of land it is of immense importance, as it is in the nature of a test case, and the decision will ultimately affect several thousand acres of land in and around Hesperia. In the year 1887, when the Hesperia Land & Water Co. was incorporated, it acquired practically all the land around Hesperia, and later this land was sold in small lots to settlers. By the agreement of purchase it was stipulated that 1 inch of water should go with every fifteen acres of land. Now it is alleged that the Hesperia Land & Water Co. has violated its agreement with the settlers and that for years the required amount of water has not been furnished the settlers, and on this account the orchards and vineyards near Hesperia have suffered. In the complaint filed yesterday plaintiffs ask for $3000 as permanent damages to their fruit trees and vineyards and $3000 damages for loss of crops. If the case is decided in favor of the plaintiffs, three similar suits will be brought by the other settlers at Hesperia.

ANOTHER BIG DAIRY FARM.—Chino Valley Champion, June 7: Daniel Durkee, the veteran dairyman of Rincon, who bought the Payne ranch of 143 acres last summer, has now added to his holdings by buying the Cavanaugh ranch of about 200 acres for $12,000 and the J. M. Hathaway ranch of 300 acres for $7000. A large part of all these ranches is wonderfully rich bottom land, suitable for alfalfa, and much of it is already in alfalfa and stocked. It is Mr. Durkee's intention to make of this property the largest, most complete and most modern dairy farm in southern California, if not in the State. With the Cavanaugh ranch he bought Mr. Cavanaugh's herd of dairy cows, and he is now buying cows to completely stock all the land. This summer he will build a creamery on the Payne ranch, with complete equipment, including refrigerating machines, and will probably expend $10,000 in buildings and equipment.

SAN JOAQUIN.

A MAN CONTRACTS A CATTLE DISEASE.—Lodi Sentinel: Mr. McCullock, ex-deputy sheriff, who is well known here, is suffering from anthrax, a disease which attacks horses and cattle, and he says he must have caught it from handling old harness. A swelling appeared on the back of his neck; at first he supposed it was a carbuncle; it continued to grow worse, and he finally applied to Dr. Dameron of Stockton, who informed him that he was suffering from anthrax, which is a very dangerous malady. The physician removed the affected flesh, cutting away a piece as large as the palm of one's hand and about as thick.

FRUIT LAND IN DEMAND.—Lodi Sentinel: A careful estimation of the acreage planted to vines last spring around Lodi and Woodbridge is 2000. Of these, the varieties are about equally divided among Tokay, Mission and Zinfandel, with a few Burghers and Black Prince. A deal has just been made between a joint stock company and the owners of what is known as the William Hart ranch, 1½ miles west of Woodbridge, by which the latter, containing 320 acres, will be planted to vines next spring. This company is composed, with one exception, of local men, the originators being F. B. Mills, Supervisor C. L. Newton, E. E. Morse, W. R. Ellis and Mr. McCoy. It is their intention to put about two-thirds of the tract to Tokay and the balance to wine grapes. The stock company has estimated that the total cost of its vineyard at the end of four years will be $125 per acre.

SANTA BARBARA.

GREEN WORMS ATTACK MUSTARD.—Lompoc Record, June 14: As we go to press word comes in from the mustard growers that the green worm has attacked the yellow variety. If so, there is another element of danger to be considered and met. There is no relief from these worms except the blackbirds, which seem less plentiful than in former years. This worm from the time of its beginning has no set period of departing until the crop is destroyed, as it works on the mustard when cut and dry as vigorously as on the succulent stalk. In former years when this destroyer came most promising crops were rendered worthless and many did not pay for harvesting. It is too early in the season to say or know how damaging these worms may prove to the present crop, but there is time for them to do a deal of mischief before the seed is gotten in the sack.

BIG LEMONS.—Santa Barbara Press, June 13: Lemons weighing over two pounds each and measuring 1½ feet around are now a Santa Barbara product. W. F. Hunt has growing at his home a tree of the American Wonder variety, recently originated by a nurseryman in Springfield, O. The tree was set out two years ago and Mr. Hunt is harvesting his first crop. There are a few lemons on the tree and two of them have been picked for exhibition. They weighed over two pounds each. One measures 16½ inches in circumference. It is said that the lemons have fine, firm pulp, and are as juicy as the smaller varieties.

MUSTARD GROWERS REFUSE 3½C.—Los Angeles Herald: The Lompoc mustard men met Saturday, pursuant to arrangement. W. S. McKay stated that his backers would take mustard at 3½ cents, but would not put up the money until the mustard was in the sack. The association rejected the proposition. The association is strong in its intention of holding the crop for 3½ cents or better. None doubt that this will be obtained, especially in the face of the fact that the prospects of a crop are not nearly so good as they were two weeks ago.

SANTA CLARA.

GOOD PRICES FOR APRICOTS EXPECTED.—San Jose Mercury, June 13: Growers are asking $40 a ton for apricots —that is, for good fruit. No offers of first-class fruit, so far as can be learned, have been made so far for less than that sum. Canners agree in saying that the crop is short and that prices will rule high. One large canner said he thought it safe to say that the large, smooth apricots—that is, the best quality—would command from $38 to $40 a ton. He thought that any reasonably good fruit fit for canning would bring from $32 to $35 a ton. It is now clear that the fruit crop of the valley will be fully as light as has been generally stated. The packers estimate that the apricot crop of the valley will not be more than from one-fourth to one-third of a full crop. In many parts of the valley there are no apricots at all. In some orchards there is a light crop. In the warm belt of the foothills the trees are loaded. The fruit promises to be of an unusually fine quality. Peaches are, perhaps, a little heavier than apricots, but far from a full crop. The early fruit is advancing rapidly.

SANTA CRUZ.

FRUIT NOTES. — Watsonville Pajaronian, June 13: The Missouri Pippins are promising another large crop. The trees which bear these apples are not much for looks, and there are several other varieties of apples which are more popular with growers and consumers, but the Missouri Pippin has been the best money maker—so say the packers—among Pajaro valley's apple trees during the past two seasons.——Following a custom which he established several years ago, G. M. Bockius has sold his fruit crop for this year to the highest bidder. All bids were sealed and were opened last Friday in the presence of the eight bidders. The highest bidders were Pulisevich Bros. The highest and lowest bids were over $800 apart, and the successful bid was an advance of $500 over the price paid last year——The "June drop" is on in apple orchards, and packers say it is fully as heavy, on an average, as it was last year. As most of the orchards have been showing a heavy crop of fruit, the "drop" does a needed thinning. When the usual period for the falling of partially formed apples is over it will be found, as in the past, that the trees are sufficiently loaded for development of a proper size for the remaining apples.

SOLANO.

BIG RETURNS FOR CHERRIES.—Vacaville Reporter, June 15: C. M. Chubb has ninety Royal Anne cherry trees near his house in the center of the valley. Since it is customary to plant 108 cherry trees to an acre, this particular cherry orchard contains a trifle less than nine-elevenths of an acre. Mr. Chubb has sold from these ninety trees over 2000 boxes in the Eastern market, which netted him over $1 a box, or in excess of $2000 for the ninety trees. This means a net return from Eastern shipments of $22 per tree, and at the rate of $2376 per acre.

SONOMA.

GOOD DEMAND FOR FARM HELP.—Santa Rosa Republican: Speaking of wages on the farm, J. W. Curry, who conducts an intelligence office in this city, says they are about the same as a year ago. During the spring months farm hands were paid on an average of $20 per month and board. The wages for the summer months are $25 per month and by the day $1 and board. A large number of new men are coming in from all parts of the State. There are said to be other counties in the State where wages are higher, but the conditions, all considered, are better in Sonoma county. The demand for labor is good this year. At the present time there is a scarcity of bark peelers, whose wages run from $35 to $40 per month, according to first, second and third class men.

WOOL SALE AT CLOVERDALE.—Reveille, June 15: The wool sale took place Tuesday and Wednesday and many of the growers were here to displose of their clip. There were no sales made until Wednesday, the growers feeling around to see how the market stood. Prices ranged from 13@15c., the latter figure being the highest price paid. Most of the wool, however, was sold for an average price of 14¼c. W. T. Brush was the largest buyer, securing over 600 bales. S. Pinschower and C. C. Farmer were also heavy buyers.

TULARE.

SQUIRREL BOUNTY LIKELY TO BE ABOLISHED.—Visalia Delta: The members of the Board of Supervisors have in an informal way discussed the advisability of rescinding the squirrel bounty ordinance and in future furnishing farmers with squirrel poison free of cost. It is believed that the farmers generally would be as zealous in their efforts to destroy the pests as they are now if they were not compelled to buy the means of extermination. The present bounty is a great drain on the treasury, the amount to be allowed at this session being about $1500. Furthermore there is always the temptation to ship squirrels in from adjoining counties. The matter will perhaps come up in an official way at the next session of the Board, and if a plan can be devised whereby proper use of the poison will be assured, some action will be taken toward the repeal of the ordinance.

IMPROVING DAIRY STOCK. — Tulare Register, June 7: The dairy stock of this valley is likely to undergo very important changes in the near future. A great many thoroughbred dairy animals have been brought into the valley during past months, and this week 159 head have been brought from New York and Wisconsin to be sold in this valley. Most of these animals were bought on order. They are all registered animals, finely bred, and are chiefly Jerseys, Guernseys and Ayrshires, with twenty or more Holstein bulls belonging to a great family of butter makers. We are in the dairying business to stay and it will not be many years before this valley will be as noted for its dairy products as for its fruits and raisins.

BIG ORANGE ORCHARD.—Visalia Delta: Emmett Barber has been surveying the Badger tract at Bonnie Brae, laying it out for an orange orchard. There are 240 acres in this tract which will all be planted to citrus fruits. Mr. Barber says that this side hill land is peculiarly adapted to the production of oranges, 40 acres of it last season having yielded as much as 100 acres on the level land below. The Bonnie Brae system of irrigation is a complete one and specially adapted to the economic use of water. Pipes are laid throughout the orchard, and at intervals of about 5 feet hydrants are placed, giving out streams about the size of one's finger, keeping the soil moist. The water is husbanded in a reservoir which is kept supplied by means of powerful force pumps below, run by a 50 H. P. motor. The pumps will hereafter be run night and day.

THE HOME CIRCLE.

Purple-fringed Orchid.

Orchid, my orchid, if I make a dell
Of mossy words, wood-mirrors of dark speech,
And with a purple "Love!" alone alight,
A poem all of gloaming monody
That leads through glimmering leafage of grave thought
Unto one rosy blossom in the dusk;
My orchid, if I shut you in my heart,
Nor rob the hemlock twilight of its star
Whom none but lovers find, and who finds none
But lovers, since the time and long before
The Cherokee's foot upon the mossy marge
Passed you contemptuous, as the mountaineer
Now passing idly notes and nothing heeds;
My orchid, if I give your scent a voice
Strange as the Sphinx's riddle, how your flower
Is human and inhuman, part of man
And infinitely apart from man, who plucks
But can not take your beauty when he goes,
Who brought your beauty with him when he came;
O orchid, purple cloud of winged stars,
O purple crown and sweetness of the dark,
Spirit, inhabit this dust of speech
And rise up living at its somber heart
To end thy monody with a rosy "Love"!

It is all made of grace and fantasy
All made of fragrance and purple air
It is all made of death for life to be;
Find it who can, and he finds beware.

—Josph Russell Taylor in Scribner's.

Alicia Gale's Final Choice.

"There was a long time that I did not know that I ought to ask you, Alicia." Mark Washburn looked fondly at his sweetheart. "Then I thought that if it was possible that you loved me, we could do the waiting together, and if you didn't—well, I could begin to get used to it. To think that you really do, Alicia! You don't know how hard I'll work. I've planned it all out. You see," he hesitated—"well, there's no use in our beating about the bush. There needn't be any keeping things from each other now. You know what mother is like just as well as I do. I wouldn't ask you to live in the same house—it wouldn't be right. The other boys have tried it and it hasn't worked, and no wonder, when her own daughter can't stand it. My plan is to build another house right near, with a covered passage between, and maybe a telephone. Then I could look after her almost as much as I do now and you wouldn't have to be bothered. The shop being across the road makes it handy, too. Of course it will take some time, though I have saved up something towards it already, but I am afraid we will have to wait a year or two at least. I'm helping Hugh and he will be through college by that time. Do you think you can wait as long as that?"

"Yes," said Alicia, slowly. "Unless—oh, don't look at me that way, Mark! You don't know how horrid I am, but I will tell you. I've thought about it a good deal since I began to think you liked me. You see, living off in a country place like this I never have had a chance to get acquainted with many nice men. To be sure there are the neighbors, and the boys I went to school with. Now I am sure that I like you the best of any of them. You are honest and steady and intelligent; you do your work well, and you are strong and manly. I haven't the least doubt that you are the best man I know. But I suppose there are lots of other nice men that I don't know, now, and one of them might come along that I liked better than I do you, and then what should I do? Of course I don't mean after we are married. I'm not quite so bad as that, but while we are just engaged."

"If you found a man you liked better," Mark spoke with an effort, "I think I care enough for your happiness to be able to give you up—but I don't know. I hope I won't have to be tried that way."

A year went by, and it was July again.

Mark stood in the doorway of the blacksmith shop. He was looking over across the little lake to Mrs. Mayhew's large house on the rising ground beyond. His face was sad but anxious, and the cause of his trouble was over at that house. It was three weeks since Mrs. Madison Drake and her son Theodore had come there to board. Mrs. Drake had been a school friend of Alicia's mother, and almost at once, upon her arrival, she had sought out the girl and made much of her. Nearly every day the three were together, and lately Mark had, several times, seen the young man rowing Alicia across the lake, that being a nearer way home than to go around by the road. Over and over again, the last few weeks, Mark had recalled every word of what Alicia had said the day they became engaged, and as he saw how happy she seemed in Drake's company, all hope left him. What chance had he, a country blacksmith with a cantankerous mother, against this handsome, well-bred city man? He saw that the time would come when he must give Alicia up. It took all of his strong self-control to keep him from betraying his feelings to her, but thus far he had acted just as he always had done. He had even shown a friendly interest in the Drakes, and listened attentively to all Alicia had to say about them.

Mark's reverie was interrupted by the arrival of Mrs. Mayhew with one of her horses. While it was being shod she went in and visited Mrs. Washburn. As he worked, Mark's thoughts were still of Alicia. When the shoes were set on he led the horse out and harnessed it to the buggy again. He was just going around to the other side of the animal to finish the harnessing, when Alicia and Drake went by. For a moment he looked her in the face, and then they passed on, and a little later Mrs. Mayhew came out and drove away. Alicia parted from Drake at her own gate, and stood looking after him. When he had turned into the path leading to the lake, Alicia, with a light, quick step, went down the road in the direction from which she had just come. She reached the blacksmith shop and entered, but the place was deserted. Picking up Mark's hammer, she rang it on the anvil, while her thoughful face smiled as she listened to the sound. She was dressed in white with blue ribbons at the neck and waist, and her figure stood out strikingly against the dark background. Mark coming in, paused and looked at her in surprise. She glanced up, and, with a little laugh, laid aside the hammer.

"I wish you would come over tonight, Mark," she said, without looking at him. "There is something I want to say to you."

"I will come," he answered, as he stood aside so that her white gown would not brush against him.

There was an awkward constraint between them as they sat in the sitting room that evening. Alicia did not raise her eyes from the floor, and there was a pause before she began hesitatingly:

"I don't know how to say what I want to as it is hard to make you understand, but I wish you to know all about it. It is about Theodore Drake." She waited for him to speak, but he said nothing.

"The Drakes have been awful kind to me, and I have seen a good deal of them. I got to know Theodore very well, and the more I saw of him the better I liked him. He is really an unusually fine man, kind, thoughtful and cultivated." She hesitated, then went on again, speaking more quickly. "You remember what I told you a long time ago about what I should do if I found a man I liked better than you. Well, the more I saw of Theodore Drake the more I despised myself. I wished at first that they had never come here. Then I thought of you and it did not seem as though I could stand it. I really tried at first not to like him, but he was so nice I could not help it, and after a time I just stopped trying. He liked me, too, though he did not act silly or anything of the kind, and his mother was lovely to me. Well, this afternoon I decided I must see you and have a talk with you. Theodore rowed me across the lake, and then he walked up here with me. Just as we got to your shop, you stepped out from behind that horse, and I looked you straight in the face." At the last words Alicia raised her eyes and looked at Mark. With a little cry she started up. "Oh, Mark! What have I done?" She looked at him in a kind of terror.

He turned away from her. "Go on," he said, in a strained voice. "Don't mind me."

She went to him quickly, and laid her arm about his neck. "You don't understand, Mark," she said, tremulously. "I was only thinking about my own confession and I thought you would understand from the first. Don't you see? I looked right at you as I went by, and for the first time I saw you two men together. Then I knew in a flash that you are the only man in the world for me."

He turned quickly and looked in her tear-filled eyes, then he understood.

"When are the Drakes going away?" he asked, a little later.

"In two days."

"I shall be glad when they are gone."

"But, Mark, it would not make any difference if they stayed forever."

"Nevertheless, I am glad they are going. You don't know—but I have been horribly jealous. What are you going to do about him?"

Nothing," said Alicia, demurely. "I told him this afternoon that I am engaged to you."

"You did?"

"Yes. And as he has been such a good friend, I told him when we are to be married."

"Alicia!" he cried, reproachfully.

"I know, Mark, that it was very improper to tell him before I told you, but I made him promise that he would not speak of it. I will tell you now if you would like to know."

Mark sighed. "I am afraid it will be a year yet. Hugh has needed more money than I expected, and mother being sick last winter. I suppose I might borrow——"

"No," said Alicia, with spirit. "I'll do a good deal for you, Mark Washburn, but I won't live in a mortgaged house with you."

"That's my feeling, too, Alicia, and so I don't see that there is anything to do but wait."

"Yes, till the fourteenth of next September, my birthday, you know."

"But, Alicia, we can't do it—on account of mother."

Alicia stood looking down at him. "Mark," she said, earnestly, "I have been thinking lately about a man who is well-to-do and who could give his wife advantages, and whose mother is very fond of me. But, Mark, I would rather marry you and help you to give Hugh his education, and help take care of your mother, even if she does not like me. What is more, I cannot wait any longer than I said, and if you are not ready then, I never will forgive you."—Susan Brown Robbins.

MRS. PARVENU was justly indignant. "How much for a gold chain like that?" she asked of the clerk.

"We sell that by the link," he replied.

This it was that annoyed her. By the link! Heavens! It was evident he took her for some common person with a limited bank account.

"Sir!" she exclaimed, "I ain't here to trifle! How do you sell them chains by the yard?"—Chicago Post.

THE ASSESSOR—Now, how much do you think your piano is worth?

Mr. Dodger—Oh, you had better put that in at $30.

Mrs. Dodger—Indeed, you will not. That piano cost $800, and you will put it down at that. I am not going to have those men down at the courthouse get the opinion that I would own a $30 piano.—Indianapolis News.

Rather too Late.

"If folks could have their funerals when they are alive and well and struggling along, what a help it would be!" sighed Aunt Jerusha, folding her paisley shawl with great care.

"Now, there is poor Mis' Brown," she added, as she pinned her Sunday bonnet into the green veil. "How encouraged she'd have been if she could have heard what the minister said today! I wouldn't wonder one mite if she'd have got well.

"And Deacon Brown a-wiping his eyes and all of them taking on so! Poor soul, she never dreamed they set so much by her!

"Mis' Brown got discouraged. Yer see, Deacon Brown, he'd got a way of blaming everything onto her. I don't suppose the Deacon meant it—'twas just his way—but it's awful wearing. When things wore out, or broke, he acted just as if Mis' Brown did it herself on purpose. And they all caught it, like the measles or the whooping cough.

"And the minister a-telling how the Deacon brought his young wife here when 'twan't nothing but a wilderness; and how patiently she bore hardship, and what a good wife she'd been! Now the minister wouldn't have known anything about that if the Deacon hadn't told him. Dear, dear! If he'd only told Mis' Brown herself what he thought, I do believe he might have saved the funeral.

"And when the minister said how the children would miss their mother, seemed as though they couldn't stand it, poor things! Well, I guess it is true enough; Mis' Brown was always doing for some of them. When they were singing about 'sweet rest in heaven,' I couldn't help thinking that that was something Mis' Brown would have to get used to, for she never had none of it here.

"She'd have been awful pleased with the flowers. They were pretty, and no mistake. You see the Deacon wa'n't never willing for her to have a flower bed. He said 'twas enough prettier sight to see good cabbage a-growin'; but Mis' Brown always kind of hankered after sweet-smelling things, like sweet peas and such.

"What did you say, Levi? Most time for supper? Well, land's sake, so it is! I must have got to meditating. I've been a-thinking, Levi, you needn't tell the minister anything about me. If the pancakes and the pumpkin pies are good you just say so as we go along. It ain't best to keep everything laid up for funerals."—Zion's Herald.

Home.

Recently a London magazine sent out 1000 inquiries on the question "What is Home?" In selecting the classes to respond to the question, it was particular to see that every one was represented. The poorest and the richest were given an equal opportunity to express their sentiments. Out of 800 replies received, seven gems were selected as follows:

1. Home—A world of strife shut out, a world of love shut in.
2. Home—The place where the small are great and the great small.
3. Home—The father's kingdom, the mother's world and the child's paradise.
4. Home—The place where we grumble most and are treated the best.
5. Home—The center of our affections, round which our heart's best wishes twine.
6. Home—The place where the stomachs get three square meals daily and our hearts a thousand.
7. Home—The only place on earth where the faults and failings of humanity are hidden under the sweet mantle of charity.

THE other evening at dinner two boys, sitting side by side, began slyly tickling each other, until one, full of laughter, dropped a cup of coffee, which he was about raising to his lips. "What's the matter with you, boys? Have you got the palsy?" cried his mother. "No," said he, quickly; "I've got the dropsy."—Baltimore Sun.

Ups and Downs of the Browns.

Brown has a cosy office
On the twenty-second floor
Of a modern office building,
With conveniences galore,
Electric lights and mail chutes
And everything first rate—
And even an elevator starter
Who is strictly up to date.

Now, Mrs. Brown came in one day,
A smile upon her face;
Took elevator No. 6
And launched forth into space.
'Tis safe to say she'd hardly gone
Beyond the second floor
When Mr. Brown came sailing down
Serene in No. 4.

"Hey, Mr. Brown!" the starter cried,
"Your wife went up this minute."
A car was just about to start
And Mr. Brown jumped in it.
"You'd better wait till she comes back!"
The starter tried to shout,
And up went Brown—a car came down
And Mrs. Brown stepped out!

The starter shook with hidden mirth
He didn't dare display;
"Your husband, mum, went back," he said,
"But crossed you on the way.
Just take a chair and rest a while,
He'll surely come right down."
She wouldn't listen; up she went—
While down came Mr. Brown.

He went back up—his wife came down
And headed for the door,
While Brown ransacked in wild despair
The twenty-second floor.
As out into the street she passed,
With proud, uplifted chin,
"I hope they'll meet in heaven," said
The starter, with a grin.

—Smart Set.

Some Reflections on the Character of Cocks and Hens.

The longer I study the cock, whether Black Spanish, White Leghorn, Dorking or the common barnyard fowl, the more intimately I am acquainted with him, the less I am impressed with his character. He has more pride of bearing, and less to be proud of, than any bird I know. He is indolent, though he struts pompously over the grass, as if the day were all too short for his onerous duties. He calls the hens about him when I throw corn from the basket, but many a time I have seen him swallow hurriedly, and in private, some dainty tit-bit he has found unexpectedly. He has no particular chivalry. He gives no special encouragement to his hen when he becomes a prospective father, and renders little assistance when the responsibilities become actualities. His only personal message or contribution to the world is his raucous cock-a-doodle-do, which, being uttered most frequently at dawn, is the most ill-timed and offensive of all musical notes. It is so unnecessary, too, as if the day didn't come soon enough without his warning; but I suppose he is anxious to waken his hens and get them at their daily task, and so he disturbs the entire community. In short, I dislike him; his swagger, his autocratic strut, his greed, his irritating self-consciousness, his endless parading of himself up and down in a procession of one.

Of course, his character is largely the result of polygamy. His weaknesses are only what might be expected; and as for the hens, I have considerable respect for the patience, sobriety and dignity with which they endure an institution particularly offensive to all women. In their case they do not even have the sustaining thought of its being an article of religion, so they are to be complimented the more.

There is nothing on earth so feminine as a hen—not womanly, simply feminine. Those men of insight who write the woman's page in the Sunday newspapers study hens more than women, I sometimes think, at any rate, their favorite types are all present on this poultry farm.—From "The Diary of a Goose Girl," by Kate Douglas Wiggin, in June Scribner's.

A SUBSCRIBER writes: "It will interest you to know that the children of Saratoga have, of their own notion, undertaken a children's patriotic celebration of July 4th."

Learning to be a Public Speaker.

In managing his voice, the speaker, when he is engaged in earnest conversation, commonly falls into the best tone and manner for public speaking. Suppose you are sitting about a table with a dozen friends, and some subject is started in which you are deeply interested. You engage in earnest and serious dialogue with one of them at the other end of the table. You are perfectly at ease, not caring in the least for your manner or tone of voice, but only for your thought. The tone you adopt then will ordinarily be the best tone for you in public speaking. You can, however, learn from teachers or friendly critics to avoid any harsh or disagreeable fashion of speech that you may have fallen into, and that may be habitual to you in private conversation.

Next. Never strain your vocal organs by attempting to fill spaces which are too large for you. Speak as loudly and distinctly as you can do easily, and let the more distant portions of your audience go. You will find in that way very soon that your voice will increase in compass and power, and you will do better than by a habit of straining the voice beyond its natural capacity. Be careful to avoid falsetto. Shun imitating the tricks of speech of other orators, even of famous and successful orators. These may do for them, but not for you. You will do no better in attempting to imitate the tricks of other men in public speaking than in private speaking.

Never make a gesture for the sake of making one. I believe that most of the public speakers whom I knew would find it hard to tell you whether they themselves make gestures or not, they are so absolutely unconscious in the matter. But with gestures, as with the voice, get teachers or friendly critics to point out to you any bad habit you may fall into. I think it would be well for our young public speakers, especially preachers, who have competent instructors and critics among their auditors, after they enter their profession, to give them the benefit of such observations and counsel as may be suggested in that way.—From "Oratory," by Senator George F. Hoar, in June Scribner's.

What She Learned.

"I thought it was a pretty fair sort of telescope for one that wasn't very big," said Uncle Silas. "I'd rigged it up in the attic by the high north window, and had it fixed so it would swing round easy. I took a deal of satisfaction in looking through it—the sky seemed so wide and full of wonders; so when Hester was here I thought I'd give her the pleasure, too. She stayed a long time upstairs, and seemed to be enjoying it. When she came down, I asked her if she'd discovered anything new.

"'Yes,' she says. 'Why, it made everybody's house seem so near that I seemed to be right beside 'em, and I found out what John Pritchard's folks are doin' in their out-kitchen. I've wondered what they had a light there for night after night and I just turned the glass on their window and found out. They are cuttin' apples to dry—folks as rich as them cuttin' apples!"

"And, actually, that's all the woman had seen! With the whole heavens before her to study, she had spent her time prying into the affairs of her neighbors! And there are lots more like her—with and without telescopes."—Wellspring.

"WHAT do you call these?" he asked at the breakfast table.

"Flannel cakes," replied the wife of his bosom.

"Flannel? They made a mistake and sold you corduroy this time."—Baltimore American.

AND now it is claimed that a dish of cold water at the head of the bed will prevent and cure restlessness and sleeplessness. Towels wrung from cold water and hung in a hot room will purify the air and lower the temperature several degrees.

DOMESTIC ECONOMY.

Domestic Hints.

FRICASEE OF SWEETBREADS.—Blanch the sweetbreads and parboil in a little white stock. When cool cut in slices, roll in flour and fry in butter till quite brown. Take them out and put into the frying pan enough rich stock to make a sauce. Flavor this with a glass of white wine. Thicken with yolks of eggs.

KIDNEYS WITH BACON.—Chop a small onion very fine; add to it double its quantity of bread crumbs, a pinch of salt, some pepper, a few drops of lemon juice, and some chopped parsley. Moisten a bit with a beaten egg. In it roll some thin slices of kidneys and fry with bacon till done. That is, fry the bacon till crisp and in its fat fry the kidneys.

CORN MUFFINS.—Mix a cup of corn meal with a cup of white flour which has been sifted with two teaspoonfuls of baking powder and a teaspoonful of salt. Stir in two tablespoonfuls of powdered sugar, three beaten eggs, and enough milk to make a good batter. Beat hard; add a tablespoonful of melted butter; beat again, and pour into greased and heated muffin tins. Bake for fifteen minutes in a hot oven.

RICE CROQUETTES.—Nothing is nicer than these made creamy and delicious. Take two cupfuls of cooked rice and add the yolks of two eggs, well beaten, some chopped parsley, a tablespoonful and a half of butter, a little pepper and nutmeg. Stir over the fire till the mixture is well blended. When cold, form into croquettes, roll in egg and then in bread crumbs, and fry in boiling fat. The inside of these croquettes should be like a thick custard.

FRUIT SALAD.—A fruit salad that may be served with a mayonnaise is delicious. Peel and divide one Navel orange and two Mandarin oranges into their natural parts; shell and halve a dozen English walnuts; take the seeds from two dozen Malaga grapes; shread one medium-sized pineapple and slice two red bananas. Chill the fruit thoroughly before preparing them, mix together, and marinate with a French dressing. Arrange on lettuce leaves and garnish with mayonnaise. Serve as soon as made.

CARAMEL CUSTARD.—Melt and stir one-half cup of sugar in an omelet pan; when light brown, add two tablespoons of water and stir into one quart of scalded milk. Add six eggs, beaten slightly, one-half teaspoon of salt and one-half teaspoon of vanilla. Strain into a buttered mould, placed in a pan of warm water, and bake thirty minutes, or until firm. When cool, turn out and pour caramel sauce over it. For the sauce, melt another half cup of sugar, and when brown add half a cup of boiling water and simmer ten minutes.

MUSTARD PICKLE.—One quart each of small whole cucumbers, large cucumbers sliced, green tomatoes sliced, and small button onions, one large cauliflower divided into flowerets, and four green peppers cut fine. Make a brine of four quarts of water and one pint of salt; pour it over the mixture of vegetables and let it soak twenty-four hours. Heat just enough to scald it, and turn into a colander to drain. Mix one cup of flour, six tablespoonfuls of ground mustard, and one tablespoonful of turmeric with enough of cold vinegar to make a smooth paste, then add one cup of sugar, and sufficient vinegar to make two quarts in all. Boil this mixture until it thickens and is smooth, stirring all the time, then add the vegetables, and cook until well heated through.

COCOANUT LOAF CAKE.—Cream half a cupful of butter with two cupfuls of powdered sugar, and when very light add the well-beaten yolks of six eggs and a cup of milk. Gradually stir in two cups of flour with which have been sifted two teaspoonfuls of baking powder and a quarter of a teaspoonful of salt. Flavor the batter with the juice and grated rind of a lemon and beat in two cupfuls of grated cocoanut. Last of all fold in quickly and lightly the stiffened whites of six eggs. Bake in two loaf tins in a steady oven until a straw run through the thickest part of the cake comes out clean. When the cakes are cold cover them with an icing flavored with a few drops of essence of bitter almond. While icing is damp strew thickly with grated cocoanut.

Hints to Housekeepers.

The rough places upon your table were probably caused by using too hot dishes. The sun's heat, if it falls upon the table for hours at a time daily, will also cause such an appearance. After each meal wipe your table off with a damp cloth to remove all suspicion of foreign matter of any kind, and then with a clean flannel cloth rub briskly for a moment with olive oil. Such treatment will keep the table intact, and if this is continued for years the polish will increase and the beauty and worth of the table be enhanced rather than detracted from. Of course this treatment does not apply to varnished furniture, but to that which is finished with what is called "hand-rubbed" polish.

Three things are required to give an enjoyable dinner party: Good taste, good judgment and an intuitive sense of harmony.

Nervousness, annoyance, anxiety on the part of the host or hostess during the serving of the dinner are the deadly foes of enjoyment.

The etiquette of dinners involves the necessity of a prompt reply to an invitation, repeating the date and hour of the dinner in order that mistakes may be rectified, the obligation of both husband and wife declining if one is prevented from going, and the impropriety of any guest leaving before the guest of honor leaves.

To make spaghetti a la Milanese plunge the ends of a dozen long sticks of spaghetti into rapidly boiling salted water, and as they soften, bend and coil them in the water without breaking. Boil until tender, pour cold water through it, to keep it from sticking together, turn back into the kettle, and reheat in one cup of milk. Fry one tablespoonful of chopped onion in one tablespoonful of butter, add one rounded tablespoonful of flour, one-half teaspoonful of salt and one saltspoonful of pepper. When well mixed add gradually one cup of strained tomato. Sweeten the tomato with a saltspoonfull of soda, if too acid. Pour the sauce on the spaghetti, and when well mixed turn out on a platter and sprinkle one-fourth to one-half cup of grated cheese over the top. Or serve the cheese on a separate dish, lest all should not care for it.

Early in the spring the kitchen sink and all cesspools and drains on the lower floor should be flushed out with a strong solution of copperas and boiling water. Examine the plumbing by the peppermint test. Mix an ounce of oil of peppermint in a pail of water, and go to the top floor of the house, where there is an opening into the waste pipe. Pour the pail of peppermint water down. If the odor of peppermint escapes in any part of the plumbing, it shows that sewer gas would also escape.

MAN SANDY, is that you?" exclaimed in surprise an old man in the street the other day. "Man, I thought ye were deed. I heard ye were drooned!"

"Oh, no; it wasn't me," returned Sandy, solemnly. "It was ma brither."

"Dear me, dear me," murmured the old man. "Whit a terrible pity!"

There was a somewhat thoughtful look on Sandy's face as he wandered away.—Tit-Bits.

TOWNE—He's quite a linguist, I believe.

Brown—Yes, he can converse in fourteen different tongues.

Towne—So I understand; but there's one tongue he never succeeds in mastering.

Brown—What's that? Chinese?

Towne—No, his wife's.—Philadelphia Press.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 19, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	July.	Sept.
Wednesday	71⅝@70¼	69⅛@68⅛
Thursday	69¾@71⅛	68¾@69⅝
Friday	71 @70⅛	69⅛@68⅛
Saturday	69¾@70⅝	68¼@68⅞
Monday	69¾@70⅛	68¼@69⅛
Tuesday	69¾@70¼	68¼@68⅞

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday	5s 9¾d	5s 9¼d
Thursday	5s 9⅝d	5s 9⅛d
Friday	5s 9⅛d	5s 9⅛d
Saturday	5s 8⅝d	5s 8⅜d
Monday	5s 8¾d	5s 8¾d
Tuesday	5s 8¾d	5s 8¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec.	May.
Thursday	1 02¼@1 02⅝	——@——
Friday	1 02⅛@1 01¾	——@——
Saturday	1 01⅛@1 01⅝	——@——
Monday	1 01⅛@1 01¾	——@——
Tuesday	1 01⅝@1 02¼	——@——
Wednesday	1 01⅞@1 01¾	——@——

WHEAT.

The market for this cereal has displayed very little activity since last review, either here or abroad, and absence of firmness has continued the prominent feature. The present indications are that there will be another year of cheap breadstuffs, the world's crop promising to be ample for the world's requirements. There were reports of the crop in England, France and Germany, showing poor condition, especially in latter country, and some efforts were made to bull values in the speculative market on account of the above, but fluctuations in futures were mainly to lower levels. Germany is ordinarily a very light importer of grain, and there is no assurance that she will prove otherwise this season. Developments later on may give a better outlook for wheat, but there is certainly nothing at the moment to indicate that there will be any very great shortage anywhere or that high prices will prevail. Deep sea ships for grain loading continue scarce, and ocean freight rates remain on a high plane. It is probable that some relief will be experienced on this score, but not in the very near future. The visible supply in the United States east of the Rocky Mountains is given at 35,139,000 bushels, indicating a decrease for the week of 153,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per contal for the week were as follows for the options named:

December, 1901, delivery, $1.02⅝@1.01½.
May, 1902, delivery, —@—c.

Wednesday, at regular noon session of Call Board, December, 1901, wheat sold at $1.01⅞@1.01¾; May, 1902, $—@—.

California Milling	$1 00 @1 05
Cal. No. 1 shipping, alongside	97½@——
Oregon Valley	1 00 @1 02½
Washington Blue Stem	1 00 @1 05
Washington Club	98¾@1 02½
Off qualities wheat	95 @ 97½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s1½d@6s2½d	6s0d@6s0½d
Freight rates	40@—s	37½@38¾s
Local market	$0 95@97½	$0 97½@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

Taking into account the amount of wheat and flour on hand at the beginning of the season, the amount on hand at the end of the season, and the amount received from points outside the State, the exportable surplus of California for the past twenty-two years appears as follows in short tons:

1900	251,164	1889	958,225
1899	653,571	1888	600,653
1898	37,986	1887	546,315
1897	603,766	1886	776,638
1896	630,732	1885	463,708
1895	449,172	1884	1,193,808
1894	368,915	1883	711,285
1893	662,506	1882	776,788
1892	735,764	1881	755,682
1891	784,425	1880	1,380,000
1890	628,382	1879	1,290,400

FLOUR.

Values show no quotable decline, but market is lacking in firmness, in sympathy with wheat. There is a fairly liberal outward movement, both to South America and Asia, but supplies continue more than ample for all needs. Business on local account has been lately of very light volume.

Superfine, lower grades	$2 25@2 40
Superfine, good to choice	2 50@2 75
Country grades, extras	3 00@3 25
Choice and extra choice	3 25@3 50
Fancy brands, jobbing	3 50@3 65
Oregon, Bakers' extra	2 75@3 15
Washington, Bakers' extra	2 75@3 25

BARLEY.

No very heavy quantities of this cereal are arriving, but demand is slow and market displays decided weakness. The new barley coming forward is showing in the main quite uniform and good average quality. Prices are in consequence at a narrow range. Nearly all the barley changing hands at present is being taken for feed. Malsters and brewers are doing practically nothing. They very seldom make any noteworthy purchases at the opening of the season. Shippers are not doing any buying here, and there are no reports of their operating to any noteworthy extent at present through interior agents. It is rather early for export buying, and with very few ships now at hand, there is not much inducement for immediate purchasing on foreign account.

Feed, No. 1 to choice	71¼@ 72½
Feed, fair to good	68¾@ 70
Brewing, No. 1 to choice	77½@ 82½
Chevalier, No. 1 to choice	——@——
Chevalier, No. 2	——@——
Chevalier, poor	——@——

OATS.

Old are in light stock and also in light request at the comparatively stiff rates which have been lately current. New are beginning to be offered, mainly by sample. A carload of new oats from Glenn county, with a heavy mixture of barley, went at $1 per cental. For choice new Red to arrive in a few days $1.15@1.17½ was realized.

White Oats, fancy feed	1 40 @1 45
White, good to choice	1 32½@1 37½
White, poor to fair	1 20 @1 30
Gray, common to choice	1 20 @1 40
Milling	1 42½@1 47½
Surprise, good to choice	1 45 @1 50
Black Russian	1 05 @1 15
Red	1 10 @1 20

CORN.

Market for Large Yellow, both Eastern and domestic, is lower and weak at the decline, buyers taking hold slowly at the reduced figures. Offerings are mainly Eastern product. Small Yellow continues in light supply. Large White is fairly steady.

Large White, good to choice	1 30 @1 35
Large Yellow	1 25 @1 30
Small Yellow	1 55 @1 60
Eastern, in bulk (carload lots)	1 20 @——

RYE.

There is not much positive inquiry for this cereal and no improvement in prices.

Good to choice, new	77½@ 82½

BUCKWHEAT.

Aside from some inferior Oregon, for which $1.65 would be a full figure, the market is bare of offerings. To secure choice, $2 or more would have to be paid.

Good to choice	1 85 @2 00

BEANS.

Not much doing in the immediate bean market, attention being now directed mainly to coming crop, but it will be about three months before new crop stock will be obtainable in quotable quantity. New Limas have been offering at $3.65, San Francisco delivery, Sept. and Oct., but there are no sales reported at the figure named. Whether the talked of corner in Bayos will be effected remains to be determined. Stocks of this variety are estimated to be about only 2500 sacks. Red Kidneys are also in very limited supply and in few hands. Supplies of Pinks remaining in warehouse are represented as not exceeding 22,000 sacks. Accepting these figures, according to the last Produce Exchange statement, there must be close to 80,000 sacks of different varieties of White beans still on hand.

Pea, fair to good, 100 lbs	4 75 @5 00
Small White, good to choice	4 75 @4 90
Lady Washington	3 90 @4 10
Butter	——@——
Pinks	1 40 @1 65
Bayos, good to choice	2 40 @2 65
Reds	3 00 @3 25
Red Kidney	4 25 @4 50
Limas, good to choice	6 25 @6 40
Black-eye Beans	2 75 @3 00
Horse Beans	1 00 @1 25
Garbanzos, large	2 00 @2 25
Garbanzos, small	1 25 @1 75

DRIED PEAS.

There are very few offering and no special inquiry at present. In the absence of any trading, values are wholly nominal for the time being.

Green Peas, California	2 65 @2 80
Niles Peas	1 60 @1 75

WOOL.

There is no activity in this center, offerings being mostly coarse to medium wools, for which there is no special inquiry on Eastern or local account. Demand is almost wholly for fine free wools. For offerings of this description no trouble is experienced in securing buyers at full current rates. Some purchasing is reported in Eastern Oregon and the northern part of this State at as good figures relatively as are current here.

SPRING.

Humboldt and Mendocino	14 @15
Northern, free	12 @13
Northern, defective	10 @11
Middle Counties, free	10 @11
Middle Counties, defective	9 @10
Southern, 12 mos	8 @ 9
Southern, free, 7 mos	7 @10
Southern, defective, 7 mos	7 @ 8
Oregon Valley, fine	14 @15
Oregon Valley, coarse to medium	12 @13
Eastern Oregon, choice	11 @13
Eastern Oregon, fair to good	9 @10
Nevada, as to condition	10 @12

HOPS.

Old are almost out of stock. The coming crop on this coast is reported in the main in good condition. In the way of contracting for new crop there is no business reported.

Good to choice 1900 crop	13½@16

HAY AND STRAW.

Tendency of values in the hay market has been to easier figures, but weakness has been confined mainly to common and defective qualities, these descriptions being offered more freely, as compared with the demand, than is choice to select hay.

NEW CROP.

Wheat, good to choice	8 50@10 00
Wheat and Oat	7 50@ 9 50
Oat	7 00@ 8 00
Oat, stained	4 50@ 6 00
Barley and Oat	6 50@ 8 00

OLD CROP.

Wheat	8 00@12 50
Wheat and Oat	8 00@12 00
Oat	7 00@ 9 50
Barley	6 00@ 8 00
Alfalfa	——@——
Stock	5 00@ 7 00
Compressed	8 00@12 00
Straw, ₱ bale	40@ 47½

MILLSTUFFS.

No special changes have occurred in values for mill offal since last review. Bran continues in very moderate stock. Rolled Barley was not quotably lower, but was offered in some instances at concessions from full figures. Values for all Milled Corn products were on the downward trend.

Bran, ₱ ton	17 00@18 00
Middlings	17 50@20 00
Shorts, Oregon	17 00@18 00
Barley, Rolled	16 50@17 00
Cornmeal	——@28 00
Cracked Corn	——@29 00

SEEDS.

The market is exceedingly quiet, there being no chance for any noteworthy business at present, owing to the very limited spot supplies. Values are largely nominal, remaining quotably as last noted. The market for new crop mustard is expected to open at about 3½c.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	9 @ 9½
Alfalfa, California	8 @ 8½
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Prices for Calcutta Grain Bags were marked up at close of last week to 7⅜c., and have since remained in that position, with fair demand and market moderately firm. Asking rates for local makes were close to the figures current on Calcuttas.

Calcutta Grain Bags, buyer June-July	7¾@—
Calcutta Grain Bags, spot	7¾@—
San Francisco Grain Bags, 22x36, spot	7½@ 7⅝
State Prison Bags in lots of 2000, ₱ 100	—@—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

There is a fairly healthy tone to the hide market, demand being good at prevailing values. Inquiry for Pelts was rather slow at full current rates. Tallow was quiet but steady.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	10 @—	8½@—
Medium Steers, 48 to 56 lbs	9 @—	7½@—
Light Steers, under 48 lbs	8 @ 8½	7 @—
Heavy Cow Hides, over 50 lbs	8½@ 9	7 @7½
Light Cow Hides, under 50 lbs	8 @ 8½	7 @—
Wet Salted Kip	9 @—	8 @—
Wet Salted Veal	9 @—	8 @—
Wet Salted Calf	10 @—	9 @—
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	75	@1 00
Pelts, medium, ₱ skin	50	@ 75
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3½	@ 3¾
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Market shows no quotable improvement, but there are no large quantities obtainable at the prices generally named by dealers. In a small way, for especially desirable qualities, slightly higher prices than are quoted are being realized.

Extracted, White Liquid	5½@ 6½
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
White Comb, 1 lb frames	11½@12½
Amber Comb	9 @10
Dark Comb	6 @ 8

BEESWAX.

Not much arriving or in stock. The little business doing is at generally unchanged values.

Good to choice, light, ₱ lb	26 @28
Dark	24 @25

LIVE STOCK AND MEATS.

With the butchers' strike ended, the market for live stock and fresh meats is again normal. Demand for Beef and Mutton is rather light, as is usual for the mid-Summer months. Packers are not securing many Hogs, the arrivals being little more than sufficient for immediate fresh meat requirements.

Beef, first quality, dressed, net ₱ lb	7 @ 7½
Beef, second quality	6½@ 7
Beef, third quality	6 @—
Mutton—ewes, 6½@7½c; wethers	7 @ 8
Hogs, hard grain fed, medium	6 @ 6½
Hogs, small, fat	6 @ 6½
Hogs, large, hard	5¾@ 5¾
Hogs, feeders	—@—
Hogs, country dressed	7½@ 7¾
Veal, small, ₱ lb	8 @ 9½
Veal, large, ₱ lb	7½@ 8½
Lamb, spring, ₱ lb	8½@—

POULTRY.

Values for most kinds were at a low range. Eastern poultry was in large receipt for this time of year, and arrivals of domestic were of fair average proportions. With many people absent from the city on their summer outings, the demand is much lighter than ordinarily. Full grown and spurless Young Roosters and fine Broilers were about the only kinds which could be disposed of advantageously.

Turkeys, live hens, ₱ lb	8 @ 10
Turkeys, live gobblers, ₱ lb	8 @ 10
Hens, California, ₱ dozen	3 50 @4 00
Roosters, old	3 00 @3 50
Roosters, young (full-grown)	6 00 @7 00
Fryers	3 50 @4 50
Broilers, large	3 00 @3 50
Broilers, small	1 75 @2 50
Ducks, old, ₱ dozen	3 50 @4 00
Ducks, young, ₱ dozen	4 00 @5 00
Geese, ₱ pair	1 00 @1 25
Goslings, ₱ pair	1 00 @1 25
Pigeons, old, ₱ dozen	1 25 @1 50
Pigeons, young	1 25 @1 50

BUTTER.

Market continued on much the same lines as preceding week. For choice to select creamery and dairy, market was moderately firm at prevailing rates, but for the more common grades was slow and not especially favorable to sellers.

Creamery, extras, ₱ lb	18 @18½
Creamery, firsts	17 @17½
Creamery, seconds	— @—
Dairy, select	17 @17½
Dairy, firsts	16½@17
Dairy, seconds	14 @15
Dairy, soft and weedy	— @—
Mixed store	12½@13½
Creamery in tubs	17 @19
Pickled Roll	— @—
Firkin, California, choice to select	16 @17
Firkin, common to fair	14 @15

CHEESE.

While stocks of domestic flats are of fair volume, values are ruling steady and are not likely to be lower this season. On Young Americas the tendency has been to slightly easier rates than have been lately current for this description, supplies showing moderate increase.

California, fancy flat, new	8 @ 8½
California, good to choice	7¾@ 8
California, fair to good	7½@ 7¾
California Cheddar	—@—
California, "Young Americas"	9 @ 9½

EGGS.

Arrivals were not especially heavy, but demand was not particularly brisk, nor is it likely to be for the next four or five weeks. Values were maintained at same range last quoted, but more custom than

existed at full current rates could have been readily accommodated.

California, select, large, white and fresh.	18	@19
California, select, irregular color & size.	16	@17
California, good to choice store	14	@15
Eastern, good to choice	14	@16

VEGETABLES.

Fluctuations in values since last review have not been numerous or pronounced in the vegetable market. Onions inclined in favor of buyers, with offerings somewhat in excess of immediate needs. Green Corn is arriving in fair quantity, mainly from Alameda in crates, and desirable qualities are selling to good advantage. Asparagus is not receiving much attention, most of that now coming forward being of very ordinary quality. Peas and String Beans were in fair supply, with prices at a little higher range than last week.

Asparagus, ℔ box	50	@1 50
Beans, String, ℔ lb	2	@ 4
Beans, Wax, ℔ lb	—	@ —
Cabbage, choice garden, ℔ 100 lbs	60	@ 70
Cauliflower, ℔ dozen	50	@ —
Corn, Green, ℔ sack	1 50	@2 00
Corn, Green, Alameda, ℔ large crate	3 00	@ —
Cucumbers, ℔ small box	75	@1 00
Egg Plant, ℔ lb	6	@ 7
Garlic, ℔ lb	3	@ 4
Onions, Yellow Danver, ℔ cental	85	@1 00
Onions, New Cal. Red, ℔ cental	35	@ 50
Peas, Sweet garden, ℔ lb	2	@ 2½
Peas, good to choice, ℔ sack	1 00	@1 50
Peppers, Green Chile, ℔ lb	20	@ 25
Rhubarb, ℔ box	35	@ 50
Rhubarb, Mammoth, ℔ box	60	@ 75
Squash Summer, ℔ small box	25	@ 40
Summer Squash, Bay, ℔ large box	85	@1 00
Tomatoes, ℔ box	50	@ 85

POTATOES.

Arrivals of new potatoes showed little increase and were not sufficiently heavy to cause any special accumulations of stocks or any weakening in values. For other than most select qualities, however, the market was not noteworthy for firmness. Old potatoes are offered rather sparingly, and are commanding tolerably steady figures, but are not meeting with active inquiry.

Burbanks, Petaluma-Tomales, ℔ ctl.	1 00	@1 30
Burbanks, Oregon, ℔ cental	1 00	@1 60
New Potatoes, in boxes, ℔ cental	1 25	@1 90
New Mission Garnet Chile, in sacks.	1 35	@1 60
New Early Rose, ℔ cental	1 15	@1 35

The Fruit Market.

FRESH FRUITS.

Most kinds now in season are in liberal supply, but only a small proportion of offerings is what could be termed choice to select. Common Sacramento river Peaches and Plums are heaviest in evidence, and Apricots of ordinary quality are also quite plentiful. Early Apples are in very liberal stock and cheap, but are mostly of common grades. Cherries were in slim receipt and choice sold to fair advantage, Black recciving the preference for immediate consumption, Royal Ann going mainly for canning and preserving. Figs are now in market from the northern part of this State, interfering with the profitable sale of offerings from southern California and Arizona. Seedless Grapes from Arizona were in moderate receipt. Berries of nearly all seasonable descriptions were in sufficiently heavy supply to cause the market to rule easier and quotably lower than last noted. Currants sold at a rather wide range, with market moderately firm for choice of the cherry variety.

Apples, Red Astrachan, ℔ 50-lb. box.	50@	1 00
Apples, green, ℔ small box	20@	30
Apricots, Royal, ℔ box	30@	60
Blackberries, ℔ chest	3 50@	5 00
Cherries, Black, ℔ box	65@	1 00
Cherries, Royal Anne, ℔ box	75@	1 00
Cherries, Royal Anne, ℔ lb	5@	8
Cherries, Black, ℔ lb	5@	8
Currants, ℔ chest	4 00@	6 00
Figs, 1-layer box, 50@90c; 2-layer	1 50@	2 00
Gooseberries, common, ℔ lb	2@	3
Grapes, Arizona, Seedless, ℔ crate	1 50@	2 00
Logan Berries, ℔ chest	4 00@	8 00
Nutmeg Melons, Arizona, ℔ crate	2 00@	2 50
Peaches, ℔ box	25@	50
Pears, Madeline, ℔ small box	20@	35
Plums, Simoni, ℔ box	25@	65
Plums, Clyman, ℔ box	20@	40
Raspberries, ℔ chest	4 00@	7 00
Strawberries, Longworth, ℔ chest	5 00@	7 00
Strawberries, Large, ℔ chest	4 00@	6 00
Watermelons, Arizona, apiece	25@	37½

DRIED FRUITS.

If there is ever a period that can be said to be "between seasons" in the dried and evaporated fruit trade, that time is now fully on. Interest at this date is mainly in new crop fruit, of which scarcely any has yet come forward, and no arrivals of consequence expected for several weeks to come. Some Apricots are in process of curing, and a few small lots have been already turned out, showing, by the way, very good quality for such early stock, but producers and buyers are in the main too far apart in their ideas of values for the consummation of much business. A few purchases of new Apricots have been made on European account at 8@8½c. for choice Royals in sacks, these being minimum figures with growers, more asking 9@10c., and many holding off the market altogether for the present. On the other hand, most of the dealers are looking for easier instead of firmer figures after the season fairly opens. Inquiry up to date for new Apricots has been principally on foreign account. In last year's dried fruit there is not very much doing outside of Prunes. There has been a fair movement lately in this fruit, and values are showing some improvement. There are no Prunes now obtainable on a 2c. basis, 2½c. being the present minimum figure for the four sizes, and choicest stock cannot be purchased under a 3c. basis, especially when the sizes are proportioned in desirable manner for the buyer. Apples are in light supply, with a very fair shipping demand for good to choice evaporated, and market firm at prevailing values. Figs and choice Pears are practically out of stock.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6½@	7
Apricots, Royal, choice, in sacks, ℔ lb	7½@	7¾
Apricots, Moorpark	9	@11
Apples, in 50-lb boxes, rings, pressed, fancy	5½@	—
Apples, 50-lb boxes, rings, pressed, good to choice	3½@	4½
Figs, White, fancy pressed	—	@—
Nectarines, ℔ lb	4	@ 6
Peaches, unpeeled, fancy	5¼@	5¾
Peaches, unpeeled, choice	3½@	4
Peaches, peeled, in boxes	11	@13
Pears, unpeeled Bartletts, halved, fancy.	5½@	6½
Pears, halved, unpeeled Bartletts	3½@	4½
Pears, quartered, unpeeled Bartletts	3½@	4½
Plums, Black, pitted	3½@	4½
Plums, White and Red	4¾@	5½
Prunes, Silver	4½@	6

COMMON SUN-DRIED.

Apricots	5½@	6½
Apples, sliced	2	@ 2½
Apples, quartered	2	@ 3
Figs, Black	—	@—
Figs, White	—	@—
Peaches, unpeeled	2	@ 3
Pears, prime halves	2½@	3½

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

Market is quiet throughout. About 800 carloads are reported still on hand, mostly 2 and 3-crown loose Muscatel. Of Sultanas there are not to exceed 60 carloads, about one-third being bleached. It is expected that the Association will this week make a reduction in prices of Muscatels.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00	@—
Dehesa Clusters, 5-crown	2 50	@—
Fancy Clusters, 4-crown	2 00	@—
London Layers, 3-crown, ℔ box	1 60	@—
do do 2-crown, ℔ box	1 50	@—
(Usual advance for fractions.)		
Loose Muscatel, 4-crown standard, ℔ lb	—@	7
Loose Muscatel, 3-crown	—@	6½
Loose Muscatel, 2-crown standard	—@	6
Loose Muscatel, seedless	—@	6½
(Above prices for loose raisins are for 50-lb boxes.)		
Seeded Raisins, 1-lb packages, ℔ lb	5¼@	—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., —o; choice, 9c; standard, —c; prime, —c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., —o; choice, 8½c; standard, —c; prime, —c. Unbleached, 7c.

CITRUS FRUITS.

Oranges are making a rather poor showing, both as to quality and quantity, the season for this fruit being nearly ended. Choice to select are especially in light stock. Common qualities are not receiving much attention. Lemons continue in fairly liberal supply, with market moderately firm for best, but weak for poor grades. Limes were offered at unchanged rates and were in sufficient supply for the demand.

Oranges—Navel, ℔ box	1 00@	2 50
Seedlings, ℔ box	—@	—
Valencias, ℔ box	1 50@	2 50
Grape Fruit, ℔ box	75@	1 50
Lemons—California, select, ℔ box	2 25@	2 50
California, good to choice	1 75@	2 00
California, common to fair	1 00@	1 50
Limes—Mexican, ℔ box	4 00@	5 00

NUTS.

Nothing of consequence doing in Almonds. There is little demand for immediate use, and asking prices are above the views of speculative buyers. It is reported that foreign crop will be of fair proportions. No Walnuts offering. Business in Peanuts is of light volume at steady prices.

California Almonds, shelled	18	@22
California Almonds, paper shell, ℔ lb	12	@14
California Almonds, soft shell	10	@12
California Almonds, hard shell	6	@ 7
Peanuts, California, fair to prime	4½@	5½
Peanuts, Eastern, hand-picked	5½@	6
Pine Nuts	5	@ 6

WINE.

The wholesale market is practically lifeless, due to the fact that stocks in first hands are virtually exhausted. The market shows the same firm tone as previously noted, with every prospect of continuing favorable to the selling interest. So far as present and prospective supplies are concerned, there is nothing to warrant anticipating other than firm and profitable figures for wine for some years to come. Nominal values for dry wines of last year's vintage are 22@25c per gallon. Movement of wines from second hands is of very fair proportions, considering the very limited quantities in stock.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	106,940	6,408,843	6,303,498
Wheat, centals	242,945	8,103,584	6,868,558
Barley, centals	37,962	3,714,097	5,028,573
Oats, centals	2,910	608,310	785,944
Corn, centals	10,775	120,075	149,791
Rye, centals	69,724	187,289	105,102
Beans, sacks	56	545,720	364,536
Potatoes, sacks	16,003	1,504,040	1,219,284
Onions, sacks	5,185	185,123	168,877
Hay, tons	2,673	158,393	152,187
Wool, bales	797	54,625	59,386
Hops, bales	64	8,298	10,638

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	195,704	3,891,480	4,250,086
Wheat, centals	287,658	7,653,394	6,245,314
Barley, centals	563	2,013,855	3,875,642
Oats, centals	...	49,466	46,557
Corn, centals	...	3,538	21,933
Beans, sacks	167	13,950	26,907
Hay, bales	722	86,891	138,720
Wool, pounds	...	1,264,291	4,463,873
Hops, pounds	816	563,232	1,102,653
Honey, cases	28	2,213	3,583
Potatoes, pack's	873	131,270	73,178

California Dried Fruit at New York.

NEW YORK, June 19.—Evaporated apples, common, 3½@4c; prime wire tray, 5½@5¾c; choice, 6@6½c; fancy, 6½@7c.

California Dried Fruits.—Moderate trade, mostly in prunes, at generally unchanged figures.

Prunes, 2⅝@6¼c.

Apricots, Royal, 8@12½c; Moorpark, 8½@14c.

Peaches, unpeeled, 6@10c; peeled, 12@18c.

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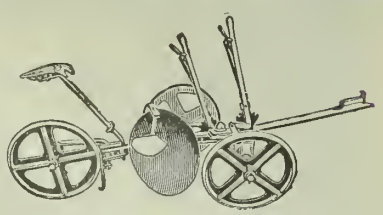

All the plow manufacturers have been making experiments of this style of plow, and this is evidence that they see sufficient merit in the principle of the disc plow to try to determine if they can make the plow so that it will do good work under all conditions. The Benicia Agricultural Works of Benicia, Cal., evidently have struck upon the right model, for they have placed orders to put up over 1000 of these plows for next season. From all accounts, it will be a surprise to other disc plow manufacturers, and many applications for agencies are already being made to the selling agents, Baker & Hamilton, San Francisco, Sacramento, Los Angeles. *

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ENTOMOLOGICAL.

Daylight Fumigation.

H. H. HOLMES at the Annual Meeting of Horticultural Commissioners of Southern California, at Santa Ana.

A little more than a year ago I tried the effect of gas on the trees by daylight. I covered some of my own trees at noontime on a bright sunshiny day, giving the trees the same charge as I would have done by night. I lifted the tents in forty minutes. I was careful in this work that no one should see me, for if all that had been told me in regard to daylight fumigation was true I was surely killing my trees; but when after forty minutes had passed I pulled my tents off, and for twenty-four hours looked at my trees, I saw no change in them. The gas—a full charge—had not done them any injury. Then I determined to try experimenting further by daylight fumigation if I could get the consent of any owner whose trees were infested with scale to let me cover them by day. I had no trouble in finding the man who was ready and willing. W. H. Jamison had some lemon trees badly infested and I placed the tents on them in a hot day just after 12 M. and gave them a full charge—only three trees—and again waited the results. There was no injury to the trees and the scale was all killed. Mr. Jamison was satisfied with the result and was anxious that I should do his fumigation by day. From this I entered all my work by day until the wind interfered. On the last day of February, 1901, I covered trees in W. Dyers' grove from 10 A. M. until 2 P. M. —a day when the sun seemed so hot that one could scarcely endure its rays. In this work I used full charge of the chemicals. The foliage on the top toward the sun was slightly scorched, but so little that Mr. Dyer, a close observer, never noticed it. I had been told by different persons who had been interested in this work that it could not be done by day, and some of them who had long experience in the work told me that they had had all the daylight fumigation they wanted, as they had to pay damages for burning trees, all of which went to intimidate me in the work, making me cautious. In Mr. Christensen's grove, where I did the work, the lemon trees had just made a vigorous growth; the tops (new growth) were burned—in fact, looked as though a fire had been near them. I watched them day by day, until I noticed the new bud and leaf starting from the same wood that had the burned leaf. Hope began to rise. When I met Mr. D. I told him his trees were burned a little. "Yes," says he, "but not injured in the least, and I know you killed the scale."

Mr. Crittinden wanted me to fumigate his orchard by day, and he wanted to help on the work. We did his work on two cloudy days, the sun not appearing on either day, and results were entirely satisfactory. I find fumigation by daylight all right, providing the weather is favorable.

1st. There must be no wind.

2nd. The trees must be dry when covered.

3rd. I would leave the tents on forty minutes, and no longer.

I have fumigated several hundred trees by day, and the difference in cost has been about 16% in favor of day work, and I think by later experiments that daylight fumigation can also be done with 10% or 12% less of the chemical than at night.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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THE POULTRY YARD.

Hints on Chicken Feeding.

A practical poultry breeder writes for the Oregon Agriculturist as follows:

Feeding little chicks has become one of the knottiest problems of this age, and you won't find three people out of ten who feed alike. Our mothers and grandmothers used to mix up a little cornmeal and water, feed the youngsters three or four times a day, and the old mother hen did the rest, yet they had just as good "luck" and raised as many chicks as we cranks of modern times. Undoubtedly the one error most frequently made, causing disastrous results, is in feeding too soon after hatching. Nature supplies the little fellows with food enough to last at least two to three days after she starts them on the road to broilerdom. If you will take the next little chicken that dies when it is two or three days old, and hold a post-mortem, you will find part of the yolk of an egg. It is this which nature intended should keep the chick alive until he was strong enough to do some hustling on his own account.

If there is anything at all that will do a chick good before it is forty-eight hours old it is small, sharp grit. The best way to give chicks a good start is to get them hungry and forever after keep them so. I do not mean to starve them, but give them all they will eat up clean in five to six minutes, and take out all remaining food. For the first few weeks, three-hour intervals is about right. No doubt many have noticed that if you try to feed chicks the same day they are hatched that the mother hen suddenly becomes ravenously hungry, and, instead of clucking to her babies to come out and eat, she attends to that part of it for them. I wonder how many have given the old hen credit for so much sense. She knows it is not best for them to have it, and that warmth alone is all they need, so instead of having a dress parade up and down the length of the coop, she contentedly hovers her babies during the best part of the first day or two. On the third and succeeding days note the change when food is brought. See how she takes it in her bill and breaks it up fine and teaches the little fellows to eat, never ceasing to cluck to assure them that all is right.

At present we have little chicks which we feed five times a day—at 6, 9 and 12 A. M. and 3 and 6 o'clock P. M. At 6, 12 and 6 o'clock we feed johnny-cake—all they will eat up clean in a few minutes; at 9 o'clock small cracked corn and green stuff—usually clover—which we cut up fine with a pair of old scissors; at 3 o'clock wheat and clover. They have fresh water and small, sharp granite grit before them at all times. Of the corn and wheat they eat very little at first, but we find this the best way to get them used to it—by giving it as a sort of lunch between meals.

The johnny-cake mentioned above is made by taking one cup cornmeal, two cups coarse bran, a teaspoonful meat meal, a little salt and tablespoonful of molasses, mixed stiff with water or milk, the latter the best. Bake well done or until it is crumbly. Increase the meat meal ingredient gradually to a tablespoonful when chicks are two to three weeks old.

Squirrilin.

The Pasteur Vaccine Co. send us copies of letters from Idaho farmers who have used "squirrilin" for the destruction of ground squirrels. They are very emphatic in their statements of the efficacy of the preparation, which is for the purpose of introducing a disease among the pests, which spreads by its own force afterwards. It is said not to be dangerous to other animals. This method of reducing the squirrel pest should be more widely tried in this State. Full particulars can be had by addressing the company as per their advertisements in our columns.

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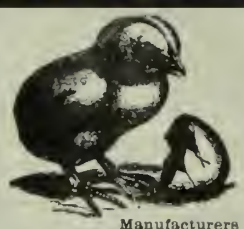

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SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

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MEAT MEAL. Best quality. Lowest price. A. Warren Robinson, Napa, Cal.

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BERKSHIRE HOGS, headed by the great boar Artful Lee 52630. S. B. Wright, Santa Rosa, Cal.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

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J. P. ASHLEY, Linden, San Joaquin Co., Cal Breeds Berkshire, Poland-China and Essex Hogs

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POULTRY supplies of all kinds. Send for my new price list and booklet, "HOW TO FEED FOWLS FOR PROFIT." CROLEY, 508 Sacramento St., San Francisco, Cal.

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PASTEUR BLACKLEG VACCINE, single treatment, ready for use. No mixing, filtering or injecting. Applied with a needle, furnished free.

PASTEUR VACCINE CO., Chicago

BRANCH OFFICE: 37 SHELDON BLDG., SAN FRANCISCO, CAL.

THE DEMAND FOR SWINE

the past year has been very great and we have been obliged to decline to quote prices to a good many inquirers as we had nothing to ship. We have one Berkshire boar farrowed Dec. 9, 1900, and also two Poland-China sows farrowed June 25, 1900, that we can sell and will describe them to anyone wishing such animals.

We have a number of young litters coming on and are already booking orders for choice pigs. Correspondence solicited.

SESSIONS & CO., 117 E. 23rd St., Los Angeles, Cal.

EMERY'S PURE MEAT MEAL

FOR POULTRY

We have put in new machinery especially adapted for the manufacture of this Pure Meat Meal. Our stock is received fresh every morning and in five hours it is sacked and ready for shipment. Ours is the *only genuine odorless* Meat Meal on the western market. Sample free. Try it for your poultry.

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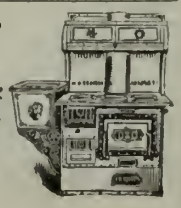
TO INTRODUCE THE

WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for $25.00. The regular retail price is $50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.



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A boon to The Farmer's Wife
250,000 now in use
Earn $10.– extra per cow each year
Highest Award at Paris
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THE DE LAVAL SEPARATOR CO.
GENERAL OFFICES 74 Cortlandt Street
CHICAGO MONTREAL SAN FRANCISCO NEW YORK PHILADELPHIA

THE DAIRY.

Farm-House Cheese Making.

It seems strange to me, says Mrs. J. A. Reeher, of Oregon, in the Orange Judd Farmer, that farmers' wives no longer make the cheese used in their families. I make all the cheese in use and sell all I can spare to campers and city folks. It is no more work to make a ten or twelve-pound cheese than it is to make that much good butter. Here are plain directions so any one can make a good cheese with the ordinary utensils found in a farmhouse:

Put your boiler on the stove and fill it with milk. You can save more than one milking if necessary, but be sure it is sweet and with all the cream stirred into it. Heat the milk to 90°, stirring it all the time. Remove to a table and stir thoroughly through it one small teaspoon of liquid rennet. Cover and let it alone for fifteen or twenty minutes, when the curd will be set. Then take a long, very thin strip of wood and cut the curd into inch squares. Again cover and leave for half an hour, till the whey rises to the top of the curd. Now take a piece of cheesecloth and spread over curd, and with a cup dip off all the whey you can. During the process turn the curd over and keep pressing it down until it is a hard, crumbly mass resembling Dutch cheese. Be slow and careful, or you will lose much cream. It takes almost a hour to dip the whey off properly, and get the curd into the right condition.

When this is done, have a washtub nearly half filled with hot water. Put your boiler, with the curd in it, into the tub and keep stirring the curd with your hands until it is heated up to 110°. Then cover closely and keep it at this heat until a bit of curd squeaks when you put it between your teeth. Mix two heaping tablespoonfuls of salt through the curd, tilt the boiler and pour off all the whey you can. Then put a piece of cheesecloth over your hoop—a steamer makes a good hoop—and pack the curd carefully into it. Arrange the cloth smoothly over the top and put a board which fits snugly inside over it. The best way is to have a hoop made of galvanized iron; 8 inches across and 10 inches deep is a good size.

Pile heavy weights on the cheese, the more the better. Take it out and turn it the next day, then put it back under the weight and leave another day. Then take it out of the hoop, bandage it and grease it all over with butter. Put it in a cool room and turn every day. Keep well greased and no flies will bother it. If mold forms, scrape it off and grease again. In five weeks it will be good, and will keep on getting better for three months if kept in a cool place, as warmth soon makes it turn strong.

The Deadly Oleander.

The Colusa Sun brings a severe arraignment against the oleander. It tells of the death of the four-months-old baby of Mr. and Mrs. Emil Crique of Grand Island. The life of the little one was cut short by drinking milk from a cow that had been eating some poisonous weed, supposed to have been an oleander bush, that grows as an ornament in so many yards. Tuesday evening the cows on the Crique ranch were driven in their corral and milked as usual, and for supper Tuesday night all but one of the family partook of the milk and, after a few hours, began to feel sick.

The baby, who had taken the milk several times, seemed worse than the others and was soon beyond human aid. The others of the family were only slightly affected and recovered.

We are informed that the cow would not eat the leaves alone, but the children had been pulling some of the flowers, and it is likely that they threw some of the leaves into the hay. It made the cow sick and all who drank of the milk.

That Australian Butter Package.

Consul Hughes, of Coburg, under date of April 26, 1901, sends the following description of a new method of packing butter for long shipments, of which we have already had mention in our columns:

A light wooden case or box is lined thoroughly at the bottom and sides with a layer of plaster of Paris one-fourth of an inch thick, on which common glass slabs, with their edges fastened together by gummed paper, so as to make a perfect fitting box, are placed. In this box the butter is placed, packed in good waterproof paper, in ten-pound packages. The glass top is then put on and sealed carefully with gummed paper bands, so as to make the box air-tight. A ¼-inch layer of plaster of Paris is then put over this and the wooden cover nailed on. Each of the cases is made to contain about 200 pounds of butter. The plaster of Paris being a non-conductor, very little heat reaches the butter, which arrives at its destination in good condition. The consul is informed that very successful results have been obtained by shipping butter packed in this manner from Melbourne to Kimberley—rather a severe test.

A Few Words about

Pain-Killer

A prominent Montreal clergyman, the Rev. James H. Dixon, Rector St. Judes and Hon. Canon of Christ Church Cathedral, writes:—"Permit me to send you a few lines to strongly recommend PERRY DAVIS' PAIN-KILLER. I have used it with satisfaction for thirty-five years. It is a preparation which deserves full public confidence."

Pain-Killer A sure cure for Sore Throat, Coughs, Chills, Cramps, &c.

Two Sizes, 25c. and 50c.
There is only one Pain-Killer, Perry Davis.'

PAGE

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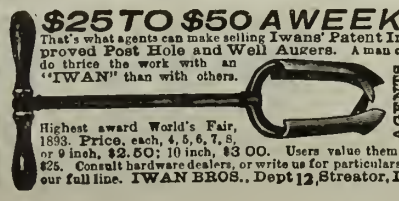
when we say that PAGE Fences require less posts than others, and that they do not sag.
PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

RIFE HYDRAULIC ENGINE
is without question the engine for the farm or country residence. Pumps more water than any ram and does it without attention. Never stops. It pumps 30 ft. high for every foot of fall. Sold on 30 days trial. Send for free catalog.
RIFE ENGINE CO.
126 Liberty St., New York.

$25 TO $50 A WEEK!
That's what agents can make selling Iwans' Patent Improved Post Hole and Well Augers. A man can do thrice the work with an "IWAN" than with others.



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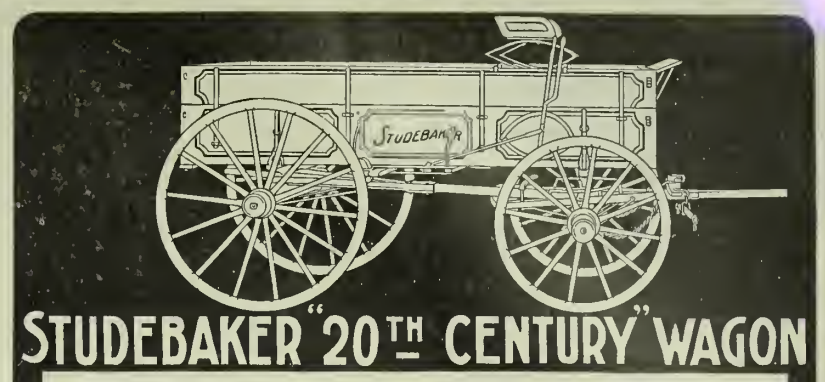
Highest award World's Fair, 1893. Price, each, 4, 5, 6, 7, 8, or 9 inch, $2.50; 10 inch, $3 00. Users value them at $25. Consult hardware dealers, or write us for particulars of our full line. IWAN BROS., Dept 12, Streator, Ill.



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AFTER FIFTY YEARS.

At the end of fifty years of continuous wagon construction, every one of which has been crowded with conscientious effort for the bettering of our product, we bring out as the accumulated experience of all those years this "Studebaker 20th Century Wagon." There is not the smallest detail or part entering into its make up that is not the best that design, material, workmanship, finish, experience and the advantage of the largest and most complete factory in the world can make it. In consequence it is the best wagon that can be made. Of those who bought the "Studebaker" 30, 20 and 10 years ago many are still using them daily and find them strong, efficient and enduring up to the present. Well, this wagon has all the good features of the old, besides many new improvements. Ask anybody who uses a "Studebaker" how he likes it. We will abide by his decision. Go to your nearest dealer and ask to see this new "20th Century Wagon." If you don't find it there write us direct, we'll give you the name of nearest agent where you can see it.

Studebaker Bros. Mfg. Co., South Bend, Ind., U. S. A.

OWING to some parties not being able to take trees they had contracted for early in the season,

I STILL HAVE A FEW THOUSAND CHOICE

CITRUS TREES FOR SALE.

The market price takes them.

Every horticulturist should have my 28-page illustrated catalogue which tells all about citrus trees, the old sorts and the tested new sorts; also table for planting trees, sowing seed, etc. Your address on a postal card will bring you one. Address

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THE above represents our SAN JOSE GRADER, of which there are more in use than of all other makes. The sales of the former to date double that of that of any former season. It will pay you to see our late improved grader before purchasing.

EVERY DRY YARD SHOULD HAVE OUR SAN JOSE ROLLER GRADER.

We carry Cannery Supplies, Orchard Trucks of all kinds, and a full line of Dipping and Processing Apparatus.

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HORSE AND STEAM POWER CATALOG FREE
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Patrons of Husbandry.

Tulare Grange Meeting.

To THE EDITOR:—Tulare Grange held its semi-monthly meeting on Saturday and the first of its annual memorial services on Sunday.

At Saturday's session Bro. Thomas Jacobs, director in the California Cured Fruit Association, reported on the annual meeting of the Association, lately held in San Jose, and of the re-election of the old board of directors, president and secretary. It was the sense of the members that profitable horticulture requires that the Association shall be maintained, and that the efforts of its officers to promote the sale and distribution of fruit shall be sustained by the Association, as also their efforts to suppress a nefarious competition by packers and growers outside the organization; that the success of horticulture depends on the success of co-operation in marketing and association for that purpose; that success in co-operation requires that every horticulturist should be a member and sell his fruit through the Association; that the action of those fruit growers who have refused to join the Association or sell their fruit through it is manifestly for a selfish and dishonorable purpose, and it has heretofore tended to demoralize the market, and that any action taken by the directors to suppress such manifestly unfair dealing meets with our approval; that the provision of the agreement between the Association and the associated packers—that the packers shall have the benefit of the increased weight by reason of processing—was approved, but it was considered fair, also, that in a spirit of give and take the packers should admit that the Association is entitled to the advantage of any higher grading in size processing may give to prunes.

The June topic of the National Grange for consideration in subordinate Granges was taken up—"Why is our agricultural college entitled to the support and patronage of farmers, and in what way does training at an agricultural college benefit the people?" It was agreed that agricultural colleges are entitled to the support and patronage of farmers.

The Lecturer of the National Grange discusses this subject, in which he shows that agricultural colleges have not done the work they are intended to do; for this default he blames, to some extent, both college and farmer. If farmers neglect to interest themselves in the course of instruction in colleges of agriculture, and if such course leads the student into any other line of education rather than in that of agriculture, the blame is on the farmer. He adds: "We take no stock whatever in the lame excuse for such a condition that boys will not attend these institutions to study agriculture in sufficient numbers to warrant giving agriculture the prominent place in the affairs. It may have been true at the time they were established forty years ago, but it is not true to-day. There is not an agricultural college in the country that could not fill its instruction halls to the doors with live, energetic students of agriculture if the sentiment from the president to the janitor was agricultural and the equipment adapted to such an institution."

The members of the Grange, in their consideration of this subject, agree that in lines of agricultural investigation and its corps of instructors, both able and zealous, the Agricultural College of California is in the front rank; but in agricultural educational lines its facilities are inadequate, and its location as an adjunct to a high, classical University is an obstruction almost, if not quite, insurmountable to its efficiency. Unfortunately, this was too forcefully illustrated at the graduating exercises of the University of California last May, when, out of many graduates, only one, a young woman, graduated from the College of Agriculture, the other graduates and students present emphasizing their contempt for the "Cow College" and its graduates by unmercifully guying her.

The College of Agriculture of California was established as an adjunct of the University by the regents, to get control of the 150,000 acres of land appropriated by Congress to establish in California a College of Agriculture and Mechanic Arts. It can readily be imaged that at that time a College of Agriculture was an innovation in higher educational lines, and but little consideration as to the course of instruction therein or the propriety or impropriety of its location was given to it.

Theoretically, there were many reasons for locating the college at Berkeley; practically, the place is a most unsuitable one—its location is a failure.

Let the regents undo what they have done amiss. Let them apply to the Legislature for a suitable appropriation to establish the College of Agriculture away from the pernicious influence of the classical University and let the college be removed. Do not tell us the Legislature will not appropriate the necessary funds. At its last session the Legislature appropriated with a free hand, one appropriation being for $250,000 for a pretty camping ground in the Santa Cruz mountains.

Let the executive committee of the State Grange, and let the State Grange itself, advocate this matter. Let the farmers of California advocate this matter, let them importune their representatives in the Legislature to appropriate $500,000 for this purpose and then California can have the leading college of agriculture in the United States.

The memorial services were held in the hall. It was gracefully festooned with flowers and ferns by Sister Gill. The present being the first annual memorial services, all members who have died since the re-establishment of Tulare Grange were remembered in the services. They were Sisters Woods, Pinney, Addler and Castle; Brothers B. F. Moore, Andrew Showers, Arthur William Mathewson, S. S. Ingham, Thomas Angelo and Bro. Carpenter.

Rev. M. Morrison officiated as Chaplain. The services were simple and impressive. J. T.

Without undertaking to discuss the propositions advanced in the foregoing arraignment of the College of Agriculture as now constituted, we may remark: First.—There were two graduates in the regular course this year, but one of them, having to return for farm work, did not appear upon the commencement stage, and thus the popular impression prevailed that the lady who appeared was the only graduate. Second.—The demonstration by the students was not ill-natured nor in ridicule. Certain people have thus regarded it and have done the students an injustice by their talk about it. Third.—There are over 200 students of the University taking the agricultural course; that they graduate in other colleges is chiefly the fault of their parents, if it is the fault of anybody. Fourth.—The greatest colleges of agriculture in the United States are parts of great universities. None, for example, stand higher in their accomplishments and in general esteem than Cornell and Wisconsin Colleges of Agriculture. Their connection with their respective universities is like that of the College of Agriculture here with the University of California. No great university can be properly called a "classical university," as the writer above uses the term; any great American university must be true to the name; if it is confined to or dominated by any particular branch of learning, it is not an university.

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FRESH CROP. BEST QUALITY.
Write for prices on all Fruit Seeds and Raffia.
THOMAS MEEHAN & SONS,
NURSERYMEN & TREE SEEDSMEN,
GERMANTOWN, PHILA., PA.

The Fly Season.

Stockmen at this season of the year look forward with dread to the regular visitation from the fly pest. The common house fly during the hot weather makes the lives of both men and animals miserable. The blow fly causes incalculable damage to live stock. Among cattle the screw worm owes its origin to a member of the blow fly family, and all sheepmen have had cause to regret the wholesale destruction which follows the advent of this pest among their flocks. Another fly particularly annoying to cattle is that called the horn fly, and many and various are the means used to prevent its annoying live stock. As a sanitary measure the total extermination of flies is to be desired, as many dangerously contagious diseases are spread by flies which, after making a meal on an infected carcass, carry away germs on their bodies and legs sufficient to set up the disease wherever they may chance to wander. In addition to flies other parasites, such as ticks, lice and mange mites, appear to be most numerous and troublesome during the summer months, so that any preparation which will afford immunity against attack from these pests certainly will be hailed as a godsend by all owners of live stock. Lincoln Dip, advertised elsewhere in our columns, is recommended to keep flies and other parasites from live stock. By washing, dipping or spraying animals in a solution of this preparation such vermin as ticks, lice and mange mites, if present, are effectively destroyed. Live stock owners should address the Pasteur Vaccine Co. and receive full information on the subject.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING JUNE 4, 1901.

675,806.—TYPEWRITER—J. F. Ames, Portland, Ogn.
675,583.—MINING MACHINE—F. Auser, S. F.
675,436.—LEDGER INDEX—V. C. Brock, Wasco, Ogn.
675,507.—SOLDERING MACHINE—W. S. Case, Haywards, Cal.
675,508.—FLOATING FISH TRAP—G. Dean, Samish, Wash.
675,440.—SASH PULL—H. W. Downing, Oakland, Cal.
675,872.—QUARTZ MILL—A. Ford, Golden Gate, Cal.
675,479.—THREAD HOLDER—Stella W. Hart, Los Angeles, Cal.
675,598.—CHURN—A. Haworth, Hillsboro, Ogn.
675,481.—SACKING DEVICE—C. F. & A. C. Jacobson, Berkeley, Cal.
675,490.—ROCK DRILL—C. T. Litchfield, Spokane, Wash.
675,514.—GOLD SAVING APPARATUS—A. W. Lockhart, S. F.
675,515.—BAND CUTTER—C. A. Long, Pomeroy, Wash.
675,491.—FLUSHING TANK—Thos. Mann, Portland, Ogn.
675,521.—ROTARY ENGINE—J. D. McFarland Jr., S. F.
675,756.—CIGAR—M. Reinstein, Portland, Ogn.
675,792.—PENHOLDER—F. Rench, Colton, Cal.
675,644.—STEERING DEVICE FOR MOTORS—A. C. Stewart, Santa Paula, Cal.
675,503.—SPIRIT LEVEL—C. M. Verrill, Oakland, Cal.
34,631.—DESIGN—H. P. Koster, Los Angeles, Cal.
34,602.—DESIGN—M. Reinstein, Portland, Ogn.

"Little Bobs" (Gen. Lord Roberts) in the course of his report of the war in South Africa, published in the Official Gazette and also in the London Times, says: "Wagons were imported for trial from the United States, and these proved to be superior to any other make of either Cape or English manufacture. The wheels were of hickory and the metal work of steel. They were built by Studebaker Bros. Mfg. Co., South Bend, Ind The superiority of these vehicles was doubtless due to the fact that such wagons are largely used in America for the carriage of goods as well as for military transport. The manufacturers have, therefore, learned by practical experience what is the best type of wagon, and what are the most suitable materials to employ in building it."

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Wouldn't you much rather own a farm than to rent one? Well, if you will buy one of our
Star Drilling Machines
and go to work drilling wells, in about two good seasons you can make money enough to buy a farm of your own and be independent the remainder of your days. Hundreds of other men have done this and why not you? At any rate the proposition is worth looking into. We mail catalog, price list, etc., free. Ask for it.
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FOR RENT.
320-Acre Farm,
two miles west of Santa Rosa, Cal. One of the best in the State. Buildings and fields adapted to diversified farming or to the breeding of fine stock. Rent Five ($5.00) Dollars per acre.
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BLACK LEG ...VACCINE.
During the past two years our vaccines have been used on several thousand head of cattle in the worst infested districts of California and with the best of results, giving entire satisfaction and proving an exceedingly profitable investment to the stock owner.
Every lot is tested and found reliable before a single dose is put on the market.
Write for literature and testimonials.
The Cutter Analytic Laboratory,
Bacteriological Dept., FRESNO, CAL.

PATENTS
Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, our Washington branch which tends *exclusively* to our business before the Patent Office, intimate acquaintance with the subjects of inventions in our own community, and our most extensive reference library, containing official American reports since 1790, with full copies of U. S. Patents since 1872. All worthy inventions patented through DEWEY, STRONG & CO.'S Patent Agency will have the benefit of a description in the *Mining and Scientific Press*. We transact every branch of patent business, and obtain patents in all countries which grant protection to inventors. The large majority of U. S. and foreign patents issued to inventors on the Pacific Coast have been obtained through our agency. We are conservative and counsel preliminary examinations in cases of doubtful novelty. Guide to inventors sent on request.
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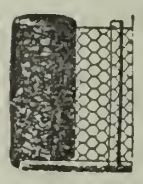
Condition first class; just out of shop after thorough repairing. Boiler good as new and newly covered. Gear cast steel. Engine has run two seasons and is suitable for plowing, harrowing or traction purposes. For further particulars, address H. BRIDGFORD, 39 Stockton St., S. F., Cal.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LOW PRICES.
Wire Cloth, Prune Dippers, Graders, Etc.
West Coast Wire & Iron Works,
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Surveying, Architecture, Drawing and Assaying.
113 FULTON ST., *one block west of City Hall*,
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Open All Year. : A. VAN DER NAILLEN, Pres't.
Assaying of Ores, $25; Bullion and Chlorination Assay, $25; Blowpipe Assay, $10. Full course of assaying, $50. Established 1864. Send for Circular.

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A virus for destroying ground squirrels or "gophers."
PASTEUR VACCINE CO.,
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The old reliable remedy for Spavins, Ringbones, Splints, Curbs and all forms of Lameness. It cures without a blemish because it does not blister. Price $1, Six for $5. As a liniment for family use it has no equal. Ask your druggist for **Kendall's Spavin Cure**, also **"A Treatise on the Horse,"** the book free, or address
DR. B. J. KENDALL CO., Enosburg Falls, Vt.

THE STOCK YARD.

Fine Stock for Stockton.

The Stockton Mail gives an interesting account of recent acquisitions of fine stock by the land owners of the region. The cattle were imported from New York State and Wisconsin by J. A. Yoakam of Fresno, who can reel off their pedigrees for many generations back. He brought 109 head to California to sell to stock breeders and dairymen, and has disposed of the majority. R. M. Hotaling of San Francisco bought fifty-two head at one fell swoop, and a number of sales have been made in San Joaquin county.

Among the most extensive purchasers here is C. D. Pierce of the Pierce Land & Stock Co., who owns the Riverside ranch on Rough and Ready island, formerly known as the Oakland ranch. At the time it changed hands there were about 200 head of cattle on it; but they did not come up to the requirements desired by Mr. Pierce and his brothers, who were the main owners of the dairy. They have sold off nearly all their original stock and have been purchasing high-grade registered animals instead. They propose that the dairy shall not be surpassed by any in the State in the matter of quality, for besides doing a dairy business they have gone into stock raising, and will have nothing but the very best.

One of the bulls purchased from Mr. Yoakam by Mr. Pierce ranks among the best in the United States. The price was $500. Another, bred by H. D. Roe of New Jersey, cost $450. This animal has three-quarters of the blood of Lilith Pauline, the champion officially-tested cow of the world to-day, giving twenty-eight pounds and four ounces of butter a week, official test. Her bull calf recently sold in the East for $1100.

Mr. Pierce also bought a cow and a heifer, descended from De Kol of Valley Mead, for $750. The heifer is the second best bred one in the United States. He purchased, likewise, two others, Mabel Hoskins Mechthilde and De Kol de Natcy Baker, for $400 each, making in all a selection of the richest bred kine in America. All the cattle mentioned are Holstein-Fresians.

As already stated, the Messrs. Pierce are in the cattle raising as well as the dairy business, and, for that reason, especially first-class stock must be kept. But there is also another advantage in buying high-priced animals, according to Mr. Yoakam. High-bred cows give many dollars' worth more of milk and butter during the season than ordinary cows do.

"You can't estimate the benefit which will arise from this importation of stock," said Mr. Yoakam. "The blood will descend down through many generations, and will find its way into many dairies, improving the quality and increasing the amount of the milk and butter products."

To the man not versed in cow lore the cattle don't look high-toned at all, and he would probably regard them as very mediocre specimens indeed, were it not for the medal labels fastened in the ear, bearing their registered numbers. But the man who knows all about bulls, cows and heifers can "spot" them in an instant as bovine beauties of the highest types.

Among the cattle brought out by Mr. Yoakam were Holsteins, Guernseys and Ayrshires. The Holsteins included twenty-two sons of Henry Stevens' Butter Boy, the greatest bred bull in the world.

William Hildreth of this county purchased a fine-bred bull, Manor de Kol Sir Clothilde, and a heifer, Valencia of Valley Mead, for $625. The bull is one of the best bred in the United States, and the second best in the lot.

Joshua Cowell of this county purchased one bull, Count Pauline Paul, and a choice heifer of Mechtilde and De Kol breeding for $600.

F. M. Cowell, also of this county, bought an extra fine bull, dam Carrie Astrea (with a record of thirty-two pounds of butter in seven days), sire Mechtilde's Caremie Collanthus.

I. S. Borden of Madera purchased two De Kol bulls for $500.

Dairying is becoming an important industry in this county, and it promises to grow rapidly. With its growth the interest in registered cattle will increase. The fine stock just obtained by Charles D. Pierce from Mr. Yoakam was ordered specially by him through that importer, being selected by Mr. Pierce from the best animals obtainable in the East. Already he has over 100 registered cattle at his dairy on Rough and Ready island. Among them is the famous Lady Kathleen, one of the best cows in the country and a crack-a-jack of the United States. He has, also, nearly the entire herd of choice stock formerly owned by Mrs. Minnie Eshelman Sherman of Fresno, who had at that time the best on the coast. Mr. Pierce bought all the animals except four or five which he did not wish to take.

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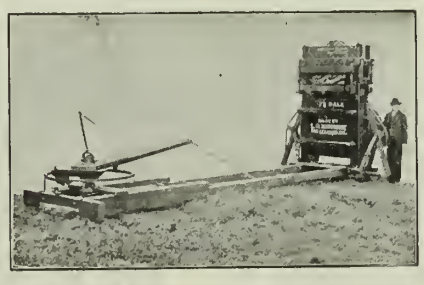

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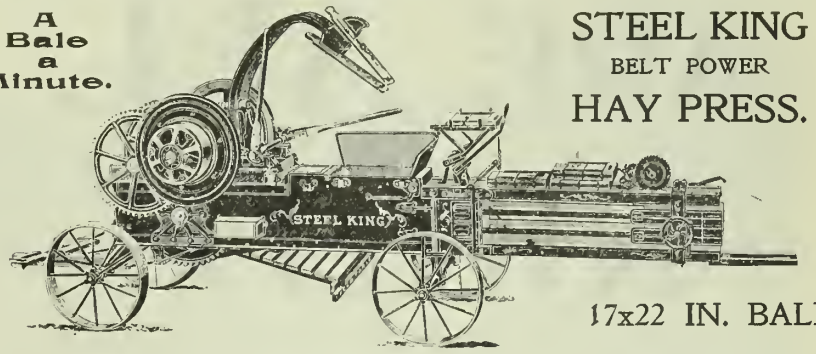

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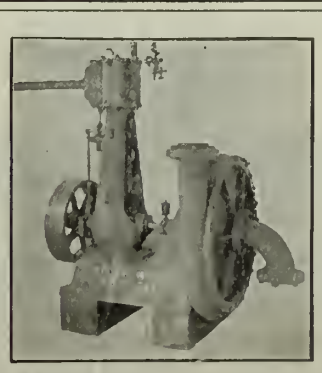

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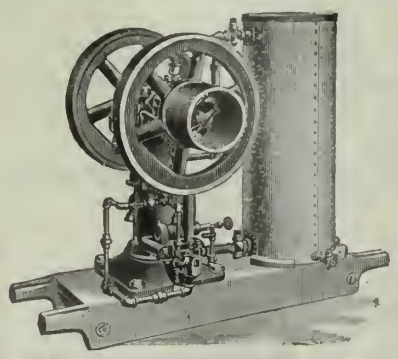

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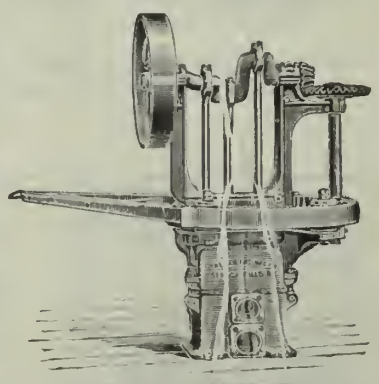

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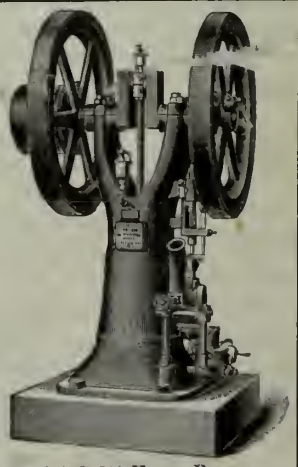

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXI. No. 26. SAN FRANCISCO, SATURDAY, JUNE 29, 1901. THIRTIETH YEAR. Office, 330 Market St.

Winter Irrigation in Arizona.

We have from time to time noted the progress of experiments at the Arizona Station to determine the efficacy of winter irrigation for deciduous fruit trees instead of the frequent summer irrigation which has been employed by most growers. The investigation has been carried on by Prof. A. J. McClatchie, horticulturist of the Station, upon the farm near Phœnix, and has been conducted with very creditable care and accuracy. We have upon another page of this issue a condensed account of the methods employed and the conclusions reached. The latter are fortified in the official publication, from which we have quoted, by ample tabular data which have been omitted, with the view of presenting the facts most clearly and directly for the advantage of those who care more about a fact than the way in which it is demonstrated. The inquiry both by its manner and by the practical importance of its conclusions is likely to prove of enduring honor to the Arizona Station and to those who conduct its work. The Arizona Station has done work far more striking and important than the stations in some of the larger commonwealths, and it is fortunate that, owing to climatic resemblances, the results of [illegible]tion in Arizona are applicable to considerable areas of California and to other contiguous States.

Winter Irrigated Orchard of the Arizona Agricultural Experiment Station as It Appeared October 8, 1899.

Green-Manuring Crop of Clover, Showing Growth Reaching into Limbs of Trees of Winter Irrigated Orchard, April 2, 1900.

The engravings on this page are illustrative of the text which is given elsewhere in this issue. The sight of such vigorous trees enduring the extreme heat and drouth of the south without irrigation for several months of the growing and fruiting season will be a surprise to those who have seen trees fail, though frequently irrigated during the hot season. As we hope to show at another time by means of Mr. McClatchie's demonstration, the secret of the success of the trees lies in using an ample amount of water, storing it deeply in the soil, cultivating well to prevent loss by evaporation and such deep storage of water serves the tree far better than frequent surface watering during the heated season when so much is lost without reaching to the roots of the trees. The idea is not new, but the present demonstration of it is striking, and it is wonderful how many have still to render the fact valuable to themselves in fruit-growing operations.

Orchard Used in Making Winter Irrigation Experiments. Three Rows on Left Side, Peaches; The Two Rows on Right Side, Apricots. Above Photograph Taken October 6, 1900, Seven Months After Last Irrigation of the Winter, and at the End of the Most Trying Season of Which There Is a Record at the Phœnix Weather Bureau.

THE passing year is making good records. The live-stock receipts at the five principal markets of Chicago, Kansas City, Omaha, St. Louis and St. Joseph during 1901 show remarkable gains over last year, both as regards April and the four months ending with April, the official receipts of cattle, hogs and sheep in the four months just ended showing an increage of 359,417 head as compared with the corresponding four months of 1900. The rise in the price of corn is pointed out as being largely responsible for this increased movement of live stock to market, it having become more profitable to sell corn at 25% above last year's price than to keep the stock on such high priced feed. The receipts of spring and winter wheat at eight markets for the harvest year to April 30th show a gain of approximately 6%.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 29, 1901.

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The Week.

The week has been warmer and harvesting has proceeded favorably. There is now much activity in all lines of crop gathering and long bright days are appreciated. Grain crops and hay are turning out better than expected—the late rains and moderate weather have been of great value. Fruit crops are seen to be light all around; some districts are almost fruitless, and we see too much disposition to let the barren trees take care of themselves for the rest of the season. In many situations this will mean a loss again next year for the trees will suffer severely for lack of moisture. If the trees are worth keeping they are worth caring for.

New wheat is off a little and old is unchanged and needed for milling. Shortages of wheat in central and northern Europe are shown by the free orders received from France and Germany. One straight wheat cargo and two more of wheat and barley have gone out. Buyers are taking new barley for export. Oats are quiet and shading down for new. Corn is in lighter supply and firmer, especially for white for export. Beans are quiet and unchanged, with little trade. Bran is steady. Hay is weak; not much is coming, but buyers are listless except for gilt edged. Beef is easier and quiet; mutton steady; hogs firm and higher—some Utah and Idaho arriving. Butter is unchanged; a carload of Eastern has arrived, probably for bakers who find their grades scarce here. Cheese is steady and in good demand. Eggs are lower and demand slow; offering, both of home and Eastern, are free. Poultry has been doing better, but is down again to the prices of a week ago. Eastern has sold for less than it cost and there has been some killing of cut rate Eastern stock to go into cold storage. Potatoes have fluctuated, but the average is about the same. Onions are easy and unchanged. Apricots are the chief fresh fruit and canners are taking them at $20 to $30 per ton. Some Bartlett pears have sold for export at $1.40 per box. Oranges are not much wanted, but prices are unchanged. Lemons are in a little better demand, but supplies are large and prices the same as before. Dried apricots are selling to some extent at 7½@8½ cents. The dried apricots this year are generally high grade. Prunes are steadier because of reduced crop outlook. Raisins are involved and efforts are being made to clear up by large sales. Buyers will have the advantage on the surplus. Fine wool has a moderate movement, but coarse is neglected.

This week's issue brings us to the close of another volume of the PACIFIC RURAL PRESS and completes the first half of the thirty-first year of our publication. Sixty volumes are already on the shelves to welcome the latest of the series. The last half year has been of much interest in our work. There has been a steady increase in our circulation and other business has advanced notably—for all of which we thank an appreciative public. It is very gratifying to promote a publication which is admitted to such close relations with its patrons and for which such cordial esteem is so constantly manifested. The index of the issues of the last half year which we print this week shows how wide and various have been the topics discussed and one can hardly fail to notice even on the slightest examination that they are closely related to the advancement of the State and to the prosperity of the producer. We aspire to truth and usefulness and are given credit for presenting facts and ideas which are most effective in helping our readers to understand California conditions and the practices and methods which are best suited to these conditions. We appreciate the acquisition of new patronage as extending our circle of knowledge and influence as well as strengthing our publication as a business enterprise. We are thankful for a kind word from any reader to one who is interested in our line of work but is not among our subscribers. The beginning of a new volume with the issue of July 6 affords opportunity for the suggestion, to any one whom you think we can interest and help, that the time is right for adding a name to our list. The outlook for the coming volume is very bright and we would like many new friends to profit by it.

Improvement of the California weather and crop service under direction of Mr. McAdie has been authorized by the Department at Washington. It is especially referred to by the letter of authorization as a "wheat and fruit service," and is to consist in securing daily telegraphic advices from not to exceed twenty-five stations, of which Mr. McAdie has designated the following: Anderson, Corning, Willows, Davisville, Vacaville, Palermo, Newcastle, Napa, Calistoga, Cloverdale, Santa Rosa, San Jose, Hollister, Lodi, Stockton, Merced, Mendota, Hanford, Porterville, Santa Maria, Ventura, Riverside. The service may begin July 1 and is for the purpose of securing more prompt and accurate information of the crop conditions and outlook. Mr. McAdie has long desired to undertake here a special fruit service similar to that long enjoyed by the corn, cotton, sugar and rice growers on the Atlantic and Gulf coasts and the wheat farmers of the great Northwest. This favor from the Washington office will enable him to demonstrate the value in such work, and is a matter of wide information and interest.

The butter scoring contest under the auspices of the California Creamery Operators' Association was a spirited one and the three judges had hard and delicate work in awarding the prizes—five suitably engraved silver cups of novel design. There were thirty-nine entries in all, thirty-five from California creameries, three from Oregon and one from Nevada. It is the intention of the association in the future to hold four scorings a year, three in San Francisco and the fourth at the State Fair in Sacramento. At the close of the year an average of the four scorings will be taken and prizes and ranks for the butter will be distributed accordingly.

The meeting of congressional representatives and irrigation engineers at Cheyenne last week, to agree upon lines along which irrigation propositions should be urged at Washington, resulted in considerable discussion and a call for a later meeting to be held in Washington just before the meeting of Congress. A bill was proposed to provide for the settlement of the arid lands by using money derived from the public lands, in the expenditure of which each State should own its own reservoirs and sell them to the settlers using the water. The money from such sales is to be used in the building of new reservoirs, etc. Thus the public lands are expected to provide for their own reclamation and irrigation.

The latest from Washington is that Prof. Elwood Mead is progressing rapidly toward recovery.

QUERIES AND REPLIES.

Gummosis of Orange Trees.

TO THE EDITOR:—I have an orchard of Washington Navel trees, twelve years old from planting. As a whole it is in excellent condition—720 trees yielding 4300 field boxes this year. I have always plowed deeply twice a year, cultivated well and fertilized, using ten pounds commercial fertilizer every six months and 10 cu. ft. of horse manure every fourth period in place of the commercial fertilizer (once in two years). The soil is the heavy red soil of this locality. I put on 75 to 80 inches of water every thirty-five days. Two years ago a few of the trees were infected with gum diseases. I cured them by using carbolic and water on some and neatsfoot oil on the others—after removing the diseased bark. A few more trees were infected last summer, which I cured in the same way. Realizing the disease as infectious I have burned all bark and kept all tools and fluids from touching healthy trees. This spring the disease has appeared in a considerable number of new trees, showing a tendency to attack the upper branches of the head rather than the bark of the trunk. In some cases it appears on both. Any methods which you may suggest for treatment and precaution against further spreading would be much appreciated.—ORANGE GROWER, San Bernardino County.

We are sorry that we have no information which may seem to you either new or otherwise satisfactory concerning the treatment of gum disease. The local application of carbolic acid after cleaning the wound is an effective means of stopping the trouble at the point and you seem to have applied that remedy with the greatest intelligence. The occurrence of the gum on the branches or upper part of the trees, as well as at the base, has been noted for some years, but no satisfactory explanation has yet been made. All investigations seem to have recurred to the general proposition that a tree that is gumming must have something the matter with its root system, and this has usually been thought to be a lack of drainage, resulting in standing water in the soil. The applicability of this idea in any particular case could be demonstrated by digging deeply near to the tree, ascertaining the condition of the soil at a depth of three or four or more feet below the surface. If the soil is either too wet or too dry it is fair to attribute the trouble of the tree to one of these causes, and the remedy is either drainage or irrigation, as the case may be. We presume these propositions are perfectly familiar to you, but they are all that can be advanced in the present state of knowledge on this subject, and this we regret, because they do not adequately account for the trouble.

Corn Ear Worm and Its Work.

TO THE EDITOR:—What is the name of the worm that works in the full ear of corn, partially or wholly destroying the ear by the time it is ready to pull? There is a grub that eats the silk from the corn and it appears and seems to destroy the beans. What is it? Is there any preventive in either case? I presume the destroying of the silk will prevent the corn from maturing.—GEORGE H. HEALEY, Corning.

One worm or grub is capable of doing all that you mention, and that is the larva of Heliothis armigera, a fat, striped worm, which also destroys cotton by attacking the boll. It also attacks tomatoes and eats holes in them. Whether this is the same grub that attacks your beans or not we cannot tell. It is always desirable to send a specimen when you wish information of this kind. The same worm has, however, a record for bean eating. It is dangerous to attack this worm by poison because the vegetables it infests pass so soon into consumption by higher animals. It is stated by Prof. Stedman, entomologist of the Missouri Station, that the Haseltine moth trap will catch the moth of the bollworm and of the cutworm, so those who have bought these traps on the wrong claim that they would catch codlin moths may, after all, find some use for them in their gardens and corn fields.

A Local Question.

TO THE EDITOR:—I have to discuss the question as to which of the two specialties, fruit growing or dairying, is the more profitable in this county. Can you give data on the subject?—READER, San Joaquin valley.

Whether either one line of stock raising and dairying or fruit growing is more profitable than the other in your county is a question concerning which the only source of information is in the county itself. The way to pursue an inquiry of that sort is to make

careful inquiry of the fruit growers and dairymen as to what their average returns are, and to get what comparative information can be had from men who have both trees and cows. In collecting such data one has to also be very careful to note the conditions under which each is working, which may influence his results. We believe the most satisfactory results will be attained by having both fruit and stock interests associated, if one has the land, the knowledge and the will to succeed.

Millipedes and Squash Growing.

To THE EDITOR:—Enclosed please find a few squash seeds and worms. The worms are eating the sprouts of all kinds of seed as soon as they begin to come out. What they do not kill as soon as it sprouts, they eat the roots and prevent growth. They are small, of a gray color and very thick. Can you tell me what they are called and if there is any way of destroying them?—READER, Cambria.

Your specimens were badly broken in the letter. Such material should always be sent in a little box and packed in moss or something else which will retain a little moisture. The fragments of a minute worm are apparently of a milliped of the order Julidæ. These earth pests are given to working in subterranean shoots like those coming from the larger seeds. They are hard to cope with, because they live in the soil and work out of sight. Gardeners overcome them by the use of soot, using a safe amount of it with the seeds when sown; but their methods are hardly practicable in field cropping. Nitrate of soda is also destructive of earth pests, but it has to be used with great care, for above a certain amount is death to the young plant as well. About the best recourse in field work lies in seeking new ground for crops which they infest, by adopting a rotation or by practicing summer-fallowing. Summer plowing in our dry climate is fatal to these forms of life.

Aphis Remains on Grape Clusters.

To THE EDITOR:—I send you a cluster of Seedless Sultana, in which the fruit, which is just setting, seems to be dotted with white, scaly-looking bodies. What are they?—W. R. N., Fresno.

The peculiar bodies clearly appear under the microscope as the remains of aphides or plant lice, which have been parasitized, and a hole in each shows the door through which the minute destroying fly has made its escape. It is the manner of a parasitized aphis body to inflate its abdomen as the parasite grows, and to change color, until it becomes a roundish ball of a light color much larger than the aphis becomes in a healthful condition. In this case the old aphis shell becomes pearly white after the parasite has escaped, and is conspicuous enough to attract your attention. Awhile ago these aphides were less conspicuous and were doing harm, but they are now, of course, placed beyond the power of doing harm by their abundant destroyers. As long as you have the natural parasite so abundant as their work appears on this specimen, you need apprehend no harm from them.

Literature on Small Fruits.

To THE EDITOR:—Does the University publish bulletins giving information on growing berries? I would be very glad to get some that treat on this subject. Information in regard to best adapted varieties, varieties that need the pollen of other kinds to make them fertile, insecticides, or in any line connected with growing, preserving and caring for fruit and berries in general, will be very acceptable.—AMATEUR, Pinole.

University publications do not cover the details of growing small fruits, because that information is given in such quantity in our horticultural journals and in "California Fruits and How to Grow Them." The designation of those strawberries which require pollenation can be found in the catalogues of the Eastern dealers, who offer long lists of varieties. Other than strawberries the small fruits have perfect blossoms and do not require special pollenizers. Even with strawberries the California practice is to select perfect blooming varieties, and little or no attention is paid to association of varieties for pollenation because of this fact.

The Truth About the Agricultural College.

To THE EDITOR.—I send you herewith a clipping from the Los Angeles Weekly Herald, which may have escaped your notice. It warmly approves your commendatory mention of the University work with the alkali soils, etc., and the other undertakings of the Agricultural Department. I take pains to send you this, because I see in the papers occasionally slurs at the college and its staff, and I wish you to know that we have editors who resent them.—READER, Los Angeles.

The article is by Joseph Ashbury Johnson, agricultural editor of the Los Angeles Herald, and we are glad to have our attention called to it. Mr. Johnson is well informed and discriminating in his work. It is a fact that the University effort is often not understood, and people connected with it not given proper credit for their industry and accomplishment. Usually the articles proceed from ignorance, and we never feel like taking them up in a controversial manner. We believe the true policy is for those who know the facts and appreciate the importance of them to calmly present them from time to time in the hope that the truth itself may at length prevail.

An Enquiring Turn of Mind.

To THE EDITOR:—What is the best insectide for scale on oleander and olive trees? Is it worth while spraying now? We have about forty trees that are a cross between a plum and prune. It blooms well but it never bears, and it makes lots of wood. What is the matter with them and what would be the best thing to graft them into? I am quite sure they are not Tragedys. How wide and deep should a hole be blasted to keep a small tree or bush growing from five to seven years? I have an idea of the size, but would like to know for sure. How many hens would you advise to put in a pen 50x70 feet; the house is 7x12 feet.—SUBSCRIBER, Sonoma.

The best treatment for the black scale is fumigation with hydrocyanic gas, but it requires quite an outfit and some experience to make the application. The best spray is kerosene emulsion, or the distillate spray described in our issue of January 26th ult. It is a good time for treatment in July and August, as the insects have hatched and are unprotected. You evidently have a plum which has the bad habit of shy bearing. The easiest recourse would be to graft over the trees next winter to any satisfactory variety you have. As for blasting a hole for a small tree or shrub it is not so much of a question how large the hole is as how well you care for the tree, with just the right amount of water and fertilizer to keep it growing well. Some people make holes to bedrock or hardpan 4 feet square and 5 feet deep, and some only make a hole 2 feet each way. Suppose you take a medium size and make it 3 feet in all directions. You can successfully keep forty hens in such area as you mention if you are diligent about cleanliness of house and yard and feed balanced rations, not omitting plenty of green stuff.

Squirrel Poison.

To THE EDITOR:—Will you through the PACIFIC RURAL PRESS give me a recipe for making squirrel poison (wheat) in which the principal poison used is either strychnine or cyanide of potassium?—S. J. M., Sargents.

We have given this formula several times but some may not yet have it. It has been found exceedingly effective: Strychnine 1 ounce, cyanide of potassium 1½ ounces, eggs 1 dozen, honey 1 pint, vinegar 1½ pints, barley 30 pounds. Dissolve strychnine in the vinegar, pulverizing it in the vinegar, or it will gather in a lump. See that it is all dissolved. Dissolve the cyanide of potassium in a little water. Beat the eggs. Mix all the ingredients together thoroughly before adding to the barley; then let it stand twenty-four hours, mixing often. Spread out to dry before using, as it will mold if put away wet. In wheat districts use wheat and in barley districts use barley, as the rodents seem to eat it better. Look out for your poultry and stock.

Red Spider on the Olive.

To THE EDITOR:—Do red spiders or yellow mites attack the olive? I have noted the appearance of a web resembling that of the red spider on the foliage of the olive but have been unable to note any real damage done or to detect the presence of the spider or mite.—J. H. A., Corning.

We do not recall an instance of injury done to the olive by the red spider; at the same time, this insect is so wide in its choice of food plants that we would not be at all surprised to find it infesting the olive. The best test would be for you to send, in a small pasteboard box by mail, specimens of such leaves and twigs which you think may be infested with the red spider.

Beneficial Insects.

To THE EDITOR:—I wish to inquire where I can get the ladybugs which are the greatest enemies of woolly aphis and San Jose scale, as I desire to get a quantity of them.—GROWER, Lompoc.

Beneficial ladybugs are being systematically bred by Alexander Craw, entomologist of the State Board of Horticulture, Clay street dock, San Francisco. If you apply directly to him he will furnish you colonies of whatever he has available. It is just now time to apply for this summer's distribution.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 24, 1901.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Conditions have been favorable for all crops during the week, and grain and fruit have matured rapidly. Grain harvest is progressing in all sections; the yield is reported large and quality excellent. Haying is not yet completed; a heavy crop is being harvested. Potatoes are yielding a good crop. Corn, hops and garden vegetables are doing well. Tragedy prunes and early peaches are being gathered, and are yielding good crops. Apricot drying is progressing. Grapes and citrus fruits are in good condition, and will probably yield fully average crops.

COAST AND BAY SECTIONS.

The weather has been slightly warmer than during the preceding week, causing more rapid maturing of the grain and fruit crops. Grain harvest is progressing in nearly all the sections, and an excellent crop is being gathered in most places; the yield is reported very light, however, in portions of Lake county. Hay making continues and baling is in progress; the yield and quality are reported good. Large shipments of hay are being made daily from Hollister. Grapes are looking well, but owing to the late spring frosts in some sections, will yield less than an average crop. Peaches and prunes will also yield light crops in many places. Citrus fruits are looking well. Hops, sugar beets and corn are making good growth.

SAN JOAQUIN VALLEY.

The weather has been clear, with warm days and cool nights during the past week. These conditions have been favorable for ripening and harvesting of grain and all kinds of fruit. The grain harvest is progressing nicely, and yield and quality are generally satisfactory. The cool nights have delayed grain ripening somewhat, but this is not injurious, as it allows the heads a better opportunity to fill. Deciduous fruits are maturing and ripening rapidly, and canneries and dryers are in full operation. The apricot crop will be light. Melons are making good progress. The second crop of alfalfa is being cut in some localities, both the yield and quality being good. Stock of all kinds are in good condition, and water for irrigation is plentiful.

SOUTHERN CALIFORNIA.

Warmer weather and almost constant sunshine in the interior during the week have been beneficial to grain and fruit. Fogs along the coast at night have benefited beans and sugar beets. Hay making, baling and stacking are in progress. Grain harvest has commenced in some sections; the yield is reported better than expected. Apricots and peaches are ripening. Nearly all deciduous fruits will yield very light crops, and the local markets will be supplied from other sections. Walnuts, grapes and citrus fruits give promise of good crops. The beet crop will be the largest for several years. Potato digging has commenced, and a fair yield is being gathered.

LOS ANGELES SUMMARY.—Foggy nights and mornings in the coast sections have been beneficial to beans and beets. Warm, and generally fair weather in the interior good for oranges. Harvest general. Hay baling continues. Olive prospects excellent. Irrigation and cultivating very active.

EUREKA SUMMARY.—Hay baling progressing; good quality, and crop above average. Grain is generally looking well; a few fields are turning yellow. Rain and warm weather would benefit fruit and vegetation.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 26, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka	.00	47.52	51.72	44.40	58	48
Red Bluff	T	24.63	23.88	27.60	96	58
Sacramento	.00	20 21	20.24	20.31	90	48
San Francisco	.00	21.17	18.47	22.49	64	46
Fresno	.00	11.31	10.27	8.88	98	48
Independence	.00	5.87	3.69	4 69	94	52
San Luis Obispo	.00	31.13	17.21	16.80	80	42
Los Angeles	.00	16.28	7.91	17.26	78	52
San Diego	.00	11.43	5.97	9.46	68	58
Yuma	.00	3.60	1.29	2.89	110	66

Agricultural Review.

ALAMEDA.

A FAIR OUTPUT OF CANNED CHERRIES.—Haywards Journal, June 22: Accompanying Supt. Van Eaton through the cannery, we found about 200 persons at work on Royal Anne cherries. It was quite a surprise to see the number of boxes of this fruit on hand, so much being said of the scarcity. About 6000 cases have already been put up. The cherry season will close about July 1st. We took particular notice of the size of the cherries at the grader, and the extras measuring three-fourths of an inch were simply surprising.

BUTTE.

TO CAN HIS OWN FRUIT.—Oroville Mercury: C. W. Reed, proprietor of the Reed orchard at Rio Bonito, which consists of over 500 acres of bearing trees, will put up a building on the orchard and equip it with improved machinery for canning and preserving the fruit grown there.

GOOD REPORTS OF WHEAT CROP.—Biggs Argus: J. F. Leeper, who has about 520 acres in grain near Nelson, exhibits heads of wheat which show an immense yield. Some heads of the Club variety showed four grains to the mesh, and from 60 to 104 grains to the head. He pulled up one bunch of wheat stalks, eighty-four in number, the heads yielding between 5000 and 6000 grains of wheat. This bunch had sprouted from a wheat and had started out the number of stalks above stated. Hundreds of fields in western Butte show the same splendid stand, and should the price reach a reasonable figure, the Butte county wheat farmer will get back his losses during the past two seasons.

SCARCITY OF WORK MULES.—Chico Record: The farmers in this community find it difficult to secure animals to run the additional number of combined harvesters made necessary on account of the large acreage in wheat. This scarcity is due to the fact that hundreds of broke mules were bought up by agents sent out by the Government to secure mules and horses, which were sent to the Philippines and China, besides a large number that were bought by agents of the German Government last year. Good young mules broke to work would find ready sale in this community at good prices.

PROFITABLE ORANGE GROVE.—Woodland Democrat: On Mrs. Hearst's property there is an orange grove of 200 acres. After paying all the expenses of cultivating the trees and harvesting and selling the crop, as well as planting and experimenting with other land last year, there was a balance of $20,000 profit.

CONTRA COSTA.

LIGHT ALMOND CROP. — Brentwood Enterprise: The almond crop in this section will not be very large, but the nuts will be of superior size. Some growers report that the crop will not be more than one-third of last year's output while others claim that it will be one-half.

GLENN.

BIG HARVESTERS AT WORK.—Orland Register: Simpson Finnell has started his new steam harvesters. They are drawn by two big oil-burning engines which he purchased last spring to do summer-fallowing. They began by using coal for fuel, but finding oil to be better and cheaper fuel got a carload with which to commence harvest. The engines are followed by a big harvester that cuts a 24-foot swath and delivers the grain sacked and ready for market. The engines run on wheels 10 feet in diameter and the tires are 5 inches wide. It will take about fifty days to harvest the crop.

MENDOCINO.

THE BARGAIN COUNTER. — Beacon, June 22: At the auction sale held at Ukiah on Thursday, as advertised by the Bank of Mendocino, the following-named properties were struck off at the respective prices named: The Montgomery ranch of 1440 acres, $1000; Collett ranch, 1600 acres, $6750; Ford ranch, in Redwood valley, 160 acres, $2000; upper Luce ranch, 3200 acres, $9500; Dooly ranch, on Capella road, 350 acres, $2000; Kellen ranch, 1600 acres, $2000; Klein ranch, 140 acres, $500; Donohoe 13-acre orchard at Ukiah, $1300; Luce ranch, adjoining Gobi place, near Ukiah, 24 acres, $500; 160 acres timber land in Township 15, Range 14, $325; 160 acres timber land in Township 21, Range 16, $200; 240 acres timber land in Township 12, Range 15, $300; 144 acres timber land in Township 14, Range 15, $150; one-half interest in 160 acres timber land, Township 15, Range 14, $100; Carlson Hotel, $500; lot in Point Arena, $100; lot in Ukiah City, $400; Anderson Valley Flour Mill and 47 acres, $400; 1100 acres of Davidson place, part of Irish ranch, $6750; 480-acre lot of Irish ranch, $3000; T. J. McGimsey ranch, 2100 acres, $10,000.

MONTEREY.

REMARKABLY LARGE CROP. — King City Rustler: J. N. Besse, who has been driving about the country continuously the past week, insuring crops, says the outlook is for a remarkably large yield. He had heard something to the effect that rust would damage a considerable portion of this year's crop, but such is not the case.

RIVERSIDE.

GOOD GRAIN CROP.—Hemet News: All estimates of the grain crop are only approximations, but the number of sacks sold to growers gives a fair idea of what is expected. In the back country it is thought the yield will be at least 300,000 sacks of wheat and barley. About 400,000 grain sacks have been imported for sale to the various grain centers at Banning, Beaumont, Alessandro, Perris, Winchester, Hemet, San Jacinto, Murietta, Elsinore and Temecula. Hook Bros. and Wm. Newport handle 100,000 more at Perris. At Alessandro a San Jacinto firm has received 80,000 and expects to order many more. It is reported that 50,000 will be handled in Winchester. Banning and Beaumont should require in the neighborhood of 50,000. The places enumerated have provided for the sale of about 300,000 sacks. Temecula, Murietta and Elsinore should require at least 100,000 additional. Four years ago Murietta alone took 100,000. Evidently about 400,000 grain sacks have been provided for the back country, extending from Banning and Beaumont on the north to Temecula and the Pauba ranch on the south.

SACRAMENTO.

A BIG PACKING HOUSE. — Record-Union: The $70,000 packing house of the Central California Canneries at Sacramento is now in operation. It covers half a block, being 341x151 feet of corrugated iron with a brick wall separating the warehouse, with a capacity of 160,000 cases, from the canning department, which will employ 500 hands and turn out 150,000 to 175,000 cases for the season. Oil is used for fuel and special precautions are taken to lessen the liability of loss by fire. A can factory will be added next winter. There will be separate entrances for each sex, also separate lunch room, cloak room and closets. There will be a room for box making and a dark room for ripening fruit 88x126. The cannery is now running full time on apricots. The fruit already contracted for gives assurance of a heavy season's output. The company will be ready to can peas next season. Arrangements will be made to take care of vast quantities of tomatoes next fall.

VALUABLE HORSE DEAD. — Record-Union, June 24: The Rancho del Paso has lost one of its most valuable thoroughbred stallions, St. Andrew, which died on Saturday from the effects of a rupture. Every effort was made by the veterinarians to save the horse's life, but without avail. St. Andrew was one of the leading sires of the Haggin breeding farm, and some of his progeny sold for high prices at the sale of yearlings in New York last week. The horse was valued at about $25,000.

SAN BENITO.

SCARCITY OF HAY PRESSES.—Hollister Advance: There is a great scarcity of hay presses in the valley. Farmers are anxious to bale from the shock, as this will effect a saving of at least 30 cents a ton. The hay crop of the county is estimated to be about 35,000 tons, and the hay-baling outfits will have to work lively to get this all in before the winter rains. Owing to the scarcity of hay presses many farmers will have to put their hay into the stack.

SAN JOAQUIN.

BUYING DRIED FRUIT.—Stockton Independent: The fruit buyer is already making his rounds of the orchard of this county and a good percentage of the crop has already been disposed of. E. K. Cassab of the California Canneries Co. of San Francisco visited a number of the orchards from New Hope to Linden during the past week and closed a number of contracts for his firm. His chief object is to secure dried fruit for Eastern shipment, as his company has contracts to deliver a large amount of this fruit in the East this year. He is also buying green fruit for the cannery at the same time. There will be a large yield of dried apricots in this county this season. Good prices are prevailing.

APRICOT DRYING.—Lodi Sentinel, June 22: Apricot drying has commenced on this side of the river. Mason Bros. began operations Wednesday and will keep a force busy from now on to the close of the fruit season. For some unknown reason apricots seem to be a little later in this immediate neighborhood than north of the Mokelumne, for cutting commenced in the Colony last week. Mason Bros. have purchased the crop of an eighty-acre 'cot orchard at Woodbridge, as well as that of the Langford orchard, numbering about the same acreage, in addition to a number of smaller crops, and will buy up all the smaller lots. In addition they have contracted to ship fifty tons of green fruit to the Sacramento cannery. They are very well pleased over the outlook and state that the 'cots are no worse affected with "shothole" fungus than last year, while being considerably larger.

SAN LUIS OBISPO.

FARM HANDS IN GREAT DEMAND.—Tribune: The yield of grain at Cayucos promises to exceed early expectation, and some individuals predict a yield surpassing the phenomenal crop of 1889, when 100,000 sacks were shipped over the Cayucos wharf. The quality of the grain is said to be excellent and the crop of hay large and of superior quality. The demand for ranch and dairy hands is so great that it is feared a scarcity of harvest help will be experienced when the rush of grain gathering begins.

SANTA CLARA.

HEAVY JUNE DROP IN APRICOTS.—Campbell Correspondence San Jose Mercury: Regarding the present outlook for fruit, it may be stated that the June drop of apricots is unusually heavy this year, which will make a small crop still smaller. The same is also reported about prunes in some orchards, but what fruit we have will be of extra fine quality. Many buyers are in the field sizing up the crop, but no definite prices have yet been established. Many orchardists are preparing to dry and handle their own fruit. The weather conditions the past week have been most pleasant and very favorable to the growing fruit, which is fast ripening on the foothills, but it will be some weeks before it will show color on the more fertile valley land. The apricot growers are reported being offered from 8½ to 10 cents per pound for the dried product, and the canners are said to be offering up to $40 per ton for choice apricots.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian, June 20: The cherry crop this year ranks as the poorest in the fruit-growing history of this valley.——A number of orchardists have sprayed their trees this summer, but the discovery of the injurious quality of certain brands of Paris green has done much to keep back this method of fighting tree pests. The crusade against the manufacturers and jobbers of poor quality Paris green should be kept up.——The packers who bought Pajaro cherry orchards while in bloom this year did not get much for their investment, and in some instances there was not enough fruit in cherry orchards to fill a box. Cherry buying was almost a dead loss this year and several thousand dollars have been dropped on that fruit. The cherry is the most uncertain of fruits. One year it will make a bonanza showing and then will follow years of failure.

SHASTA.

GRASSHOPPERS DEVASTATING FIELDS AND ORCHARDS.—Anderson News: Grasshoppers are reported to be numerous on the east side. In some places it is said they have stripped the fruit trees completely, eating the fruit and foliage. The pests seem to be going south.

FAVORABLE RESULTS FROM STRAY RYE SEED.—Red Bluff Sentinel: D. Le Febvre exhibits a fine sample of rye which was grown on Stillwater creek, near Anderson. Near his place lives Mrs. McAvoy, who one day picked up a head of rye which by chance grow in her garden. The head contained forty-seven grains, and at his request were given to a neighbor, Mr. Dickin, to plant. After three years he surprised Mrs. McAvoy one day by giving her four sacks of rye, weighing over 500 pounds. From the third year's crop he had threshed thirty-seven sacks of rye, or nearly two and a half tons, from the original forty-seven grains.

SONOMA.

THE GRAPE CROP.—Santa Rosa Republican: W. E. Richards, former deputy sheriff, now an extensive vine grower at Skaggs' Springs, says the grape crop generally is less than a full one, but there are patches where a fair yield will be realized.

SUTTER.

PUTTING IN DRYING PLANTS.—Sutter Independent: There is a disposition on the part of many of the small fruit growers in this locality to erect and conduct their own fruit drying plants. They believe in being in a position to handle their own fruit and get all the profits there are to be had. C. W. Burch in the Stewart tract and S. McClure near town are both making arrangements to dry their own fruit.

TREES HEAVILY LADEN WITH FRUIT. — Sutter Independent: F. E. Weast took a trip among the Antelope valley orchards and at the Ding Sang Co.'s orchard and garden on Antelope creek. On the Cone ranch he found that the Muir and Crawford peach trees were hanging so heavy with fruit that the orchard men are already beginning to prop up the branches to keep them from breaking down. He says there will be a medium crop of apricots on the place, some trees bearing pretty good crops. He brought with him a branch from a prune tree that was covered with healthy, fair-sized prunes. They were so thick on the little branch that they looked almost like a cluster of grapes. The branch was not more than 2½ feet long and on it there were 125 prunes.

PRICE OF PEARS JUMPING. — Sutter Independent: The pear growers who contracted to the Canners' Association at $22.50 and $25 are now "sorry they spoke." Many growers who did not contract their fruit have already sold their pears for $35, and it is thought they may go even higher in price.

TULARE.

MONEY IN FRUIT.—Visalia Times: The Visalia Fruit & Land Co. owns 440 acres of the best land in Tulare county. It was planted out in the spring of 1890-91 and has borne a crop of fruit ever since 1893. The yield of peaches has been little short of marvelous and the place will probably net $40,000 this year.

SERIOUSLY HURT BY A HARVESTER.—Tulare Register: William Keating was badly hurt last Tuesday by a harvester. He was leaning over a shaft to fill an oil cup when his overalls caught on a set screw and he was hurled around the shaft three times before the big machine could be stopped and the man extricated from his predicament. Just how badly he is hurt is not known, but his shoulder was broken and it is likely that he was otherwise injured. His clothing had to be taken off him before he could be taken out of the machine.

AN OLD ROOSTER.—Tulare Advance: E. Moore thinks he has the oldest rooster in the whole country. He brought the fowl with him from Stockton over eleven years ago, and says that, now he has lived this long, he expects to keep him just to see how many winters he will go through.

FIRST WHEAT.—Stockton Record: The first carload of wheat to arrive in Stockton came Friday, the 14th inst., from Terra Bella, Tulare county, and was consigned to the Farmers' Union. It is fine and plump, of the Sonora variety. There were 243 sacks in the lot, and the grain was grown by Henry Hunsaker. It averages about 145 pounds to the sack.

YOLO.

A FINE BULL.—Yolo Mail, June 7: Mrs. C. E. Byrns has received from New York a fine yearling bull of the Holstein-Friesan variety. His name is Ulrika De Kol and his ancestors are of the most noble of the noble breed. Ulrika De Kol's sire is Aaggie Sir Du Kol; his dam, Manor Du Kol Queen, who as a two-year-old gave fifty pounds of milk a day. His grandsire is Manor Du Kol No. 21226, whose dam, Netherland Kengerveld, has the world's seven-day official butter test. His granddam is Aaggie Grace 2nd Pietertyn. She at five years old had a record of over twenty-two pounds of butter per week and an official milk record of over 100 pounds per day. In 1897 she won the sweepstakes and first prize for the class at New York, Indiana and Wisconsin State Fairs. On the sire side the granddam is De Kol 2nd, the foundation of this family and the best known cow of this breed. She held the world's butter record for seven years.

YUBA.

FAIR YIELD OF GRAIN.—Marysville Democrat: Several harvesters are at work in this vicinity and the reports of yield of wheat are very good. The grain is full weight and the average yield of sacks to the acre is at least two more than was threshed last year. In some fields the yield is very large, while the general average, both of wheat and barley is very fair.

Discriminating Praise.

The PACIFIC RURAL PRESS commends itself by good reading—very plain, sometimes original. It is just the paper for the rural districts.—C. FORKERT, Mississippi.

THE IRRIGATOR.

Winter Irrigation of Deciduous Orchards.

Condensed from Bulletin 37 of the University of Arizona Agricultural Experiment Station by A. J. McClatchie, Horticulturist of the Station.

During December, 1898, experiments were begun at the Station farm near Phœnix to test the effects of the irrigation of deciduous fruit trees during the winter months. The difference in opinion among orchardists as to the value of winter irrigation suggested the making of carefully conducted experiments along this line. The question as to how best to maintain orchards in a thrifty state under the somewhat trying conditions existing in the valleys of Arizona was one of much importance to the fruit interests of the Territory.

Climatic Conditions of Southern Arizona.—In the valleys the rainfall is usually so light that little of it reaches the roots of orchard trees. The soil is seldom wet to a depth of more than eight inches by one storm, and usually the rains are so infrequent that the soil becomes dried out between storms. Hence, in growing fruits, orchardists rely wholly upon irrigation, the supply for this purpose coming from the higher elevations.

In the mountains the precipitation is much greater, the fall of rain and snow being sufficient during a part of most years to cause a subsequent heavy flow in the streams that furnish water for irrigation. A large part of the water that falls in the mountains in the form of rain flows away within a few days or weeks. The remainder slowly percolates through the soil and rocks to the stream beds, thus maintaining a flow which, even though continuous, is not sufficient to supply with water the lands needing it. The water that falls as snow comes down to the valleys below more gradually, furnishing an increased supply for irrigation for one or two months.

While precipitation may occur at any time of the year, in most of southern Arizona, there are two seasons during which the fall is heavier than during the remainder of the year, and the consequent supply of irrigating water much greater. The greatest precipitation occurs from July to September, inclusive, the other rainy season occurring from December to February, inclusive. The rain and snow falling in the mountains during the latter period usually furnish an increased supply of irrigating water until the end of March. From the latter month until July the rainfall is light and the supply of water usually gradually diminishes, becoming very low during June. The summer rains swell the streams and increase the supply of irrigating water temporarily. Then follow about three months during which the supply is again usually less than the demand in many valleys of the Territory.

Temperature and Relative Humidity.—The coolest months in southern Arizona are December and January, during which heavy frosts are frequent in most of the valleys. During February the weather becomes warm enough to start the buds of some deciduous trees, and by the end of March all are partially or wholly leaved out. The principal part of the growth is made during the three months that follow. During these three months the weather becomes increasingly warm, the maximum temperatures, by the latter part of June, ranging from 100° to 115° F. in the shade in most of the cultivated valleys. The relative humidity of the atmosphere decreases as the season advances and the temperatures rise, evaporation consequently becoming very rapid. During July, August and September the weather is as warm as, or warmer than, during June; but the humidity is temporarily increased from time to time by rains, and the weather is consequently less trying upon vegetation. From September to December the weather grows gradually cooler, and the relative humidity usually gradually increases.

Supply of Irrigating Water in Salt River Valley.—Although the rainfall is heavier during the summer than during the winter, the flow of the river is much greater during the latter season. The parched condition of the watershed and the rapidity of evaporation during the hot summer months are undoubtedly responsible for the failure of most of the rainfall of that season to reach the valleys below. The precipitation during July, August and September is one-sixth greater than that of December, January and February; yet during these three summer months the flow of the river is less than one-third what it is during the three winter months. Hence, during the months of December, January and February an average of over three times as much water is available for irrigation as during the summer period of most abundant supply.

Prevalent Methods of Orchardists.—The practice among orchardists, before the experiments were begun at the Station farm, had been—and to a considerable extent is yet in many parts of the Territory—to begin the irrigation of their orchards during February or March, about the time the development of the buds began, and irrigate about once a month until October, or as often as water could be obtained. During considerable of this period the amount of water available was usually inadequate to the demands of the trees, and orchards frequently suffered from drought. The methods of applying the water and the subsequent treatment of the orchards varied very much. Some fruit growers applied the water through temporary furrows about 3 feet apart, some through permanent ditches made between the rows of trees, and some by flooding the entire surface of the soil. In some cases an irrigation was followed by cultivation, as soon as the soil had dried sufficiently. In many cases orchards were seldom or never cultivated, some growers believing that the growth of weeds during summer was essential to the welfare of the trees, since they kept the soil cool and thus supposedly checked evaporation.

Purpose and Scope of the Experiments.—Previous to beginning the experiments there existed considerable difference of opinion among fruit growers as to whether, under the trying climatic conditions of southern Arizona, the irrigation of an orchard during winter, when the trees were dormant, would materially lessen the amount of water that would need to be applied during the succeeding summer. The orchards upon the station farm had been irrigated about once a month through the summer of 1898, water having been last applied about the middle of September. During the following winter all were irrigated more or less thoroughly, but one isolated orchard of about three-fourths of an acre was chosen for special treatment and observation. The orchard consists of three rows of peach trees and two rows of apricot trees, set 24 feet apart. It had been planted in 1892 and the trees had, therefore, been growing in their present situations seven seasons. The soil is a clayey loam.

Water was withheld from this small experimental orchard from September until January 9, when the frequent application of water began. The orchard was irrigated by the furrow system eight times, fresh furrows having been made with a turning plow twice during the winter. The last irrigation occurred March 29 to 31.

As soon as the soil had dried sufficiently it was harrowed crosswise the furrows to check evaporation from them. It was subsequently plowed deeply and harrowed thoroughly. During the two following months it was cultivated twice. It received no irrigating water until June 24, and no rain fell in the meantime. It was cultivated as soon after irrigation as the soil was sufficiently dry, and was cultivated once more during the summer.

The orchard remained in excellent condition throughout the season. The trees grew thriftily and maintained a vigorous appearance all summer. The young shoots on the peach trees were 3 to 5 feet long and those on the apricot trees 4 to 6 feet long. The trees were well loaded with fruit that was larger than and of superior quality to that borne the previous year, when the orchard was irrigated frequently during the summer. The results of the season's experiments were satisfactory in every way.

Another Trial.—The winter irrigation during 1899–1900 was begun December 16. Water was applied about as rapidly as the soil would absorb it, until three feet in depth had been given the orchard. The last irrigation of the winter occurred March 5.

As soon as the soil was dry enough, the orchard was plowed each way about a foot deep, harrowed thoroughly and left for the summer. After summer showers, a cultivator was run over the surface to break up the crust that formed. In this way an earth mulch six to eight inches deep was maintained. No water was applied for over eight months, during which period the rainfall was but two and one-half inches, divided among five rains.

As during the previous season, the trees remained in excellent condition throughout the summer. During May and June occurred the dryest hot period of which there is a record in the valley. At the end of it the orchard showed no signs of drought whatever, the peach trees having made a growth of about four feet, and the apricot trees a growth of three to six feet. During the dry, hot period mentioned above, the apricot trees matured a good crop of excellent fruit. Many of the peach trees remained unusually heavily loaded with fruit that matured during July and August, the quality being fully up to that of the previous year.

Though the summer continued unusually dry (the mean relative humidity being the lowest recorded at the Weather Bureau at Phœnix), the trees maintained a vigorous appearance until November. Though having received no irrigating water for eight months, at the end of a season during which many orchards died, no thrifter or more vigorous orchard existed in the valley.

A Green-Manure Crop.—During the two previous years a green-manuring crop was grown in the other two orchards on the farm. Since it was found that the soil in these orchards would not only produce a heavy winter crop, but became thoroughly moistened to as great a depth as in the smaller orchard, the soil of which had been left bare, the latter was sown to clover (Melilotus indica) November 6. The seeding was followed by an irrigation, and water was supplied frequently enough until March 29, to keep the growing well. During this period water to the depth of four feet was applied. The green-manuring crop was turned under April 6. As shown by the accompanying illustration, the clover was twenty to thirty inches high, and very thick upon the ground. Judging by the amount applied the previous winter, the clover consumed, during the four months of its growth, about one foot more water than evaporated from the surface of the bare soil from December 16 to March 5, 1899.

One Summer Irrigation Considered Advisable.—If about the middle of the summer, water is available in abundance, it would probably be wise to give the orchard a thorough irrigation in as short a time as possible, and then follow the irrigation with a thorough plowing, as in the spring after the winter-irrigation ceases. But frequent summer irrigations are decidedly not advisable under our conditions, where the soil is fairly deep and retentive of moisture.

Following the above paragraphs, which we have selected from Prof. McClatchie's bulletin, there is an account of the results of soil examination to a great depth to determine the presence of moisture. We will outline this at another time.

THE FIELD.

Sugar Beet Growing.

By John Ruopp at the Chino Valley Farmers' Club.

The culture of the sugar beet in this country is yet in its infancy, but we can even now see, at this early stage, the great advantage to the country and the profit to be derived from it, and we hope before many years have elapsed to see it one of leading industries.

But the disadvantages are also to be considered and ways and means discussed to improve our methods of cultivating so we can retain the moisture in our soil, for here in California our greatest disadvantage is insufficient moisture.

Rotation.—In the first place there must be a system maintained, as with any other business, and to do this we must first start with a rotation of crops; and in the second place the work must be done in the right time and in the right manner. Plowing is generally commenced when planting should be done. By this delay much valuable moisture is lost, and this point cannot be too strongly impressed upon our farmers. In many cases the farmer undertakes too much, and so gets behind with his work, the natural vegetation soon absorbing the moisture; and this proves a detriment instead of a benefit as it should be, for if plowed under at the proper time it is a good fertilizer and will quickly decay and add to the fertility. Again in some cases, even if the land is plowed, if the other tools are not used at once, the moisture is lost, and to retain this is of vital importance to us Chino farmers, and in order to make a success these details must be carefully attended to in beet farming.

After doing this I would suggest that we take one-third of our land for barley, one-third for beets, and the other one-third for any other crop which we may prefer. After the crop is off the first one-third the stubble should be plowed under at once, and then, during the dryest time of the season, cleaned of all growing roots and prepared for deep plowing, which should be done in the fall, and the land left in good condition to get the full benefit of the winter's rain. A different system of plowing should also be adopted. Plowing around—starting at the edge of the field and plowing in circles toward the center—should be avoided, as it is not a good plan for the land to be left in such manner, the soil being forced toward the outside and left lower where you turn around toward the center, and this might cause a wash. If you must plow around better start in the center, thus removing the soil from the outside; but the proper way to plow is back and forth, and by this manner of plowing the land will also retain more moisture.

Essentials.—We know that our beet land is more or less in need of fertilizing. We should haul our stable manure on it before the deep plowing in the fall. It would be a good plan to distribute the stable manure over half the stubble land, and on the other half plant green fertilizer. In this way you would get on all your land stable manure and green fertilizer once every six years.

The remunerative results from any crop depends largely upon the manner of cultivation. It is particularly so with sugar beets. Beets should be treated as a garden plant, and the seed bed in which they are planted should be as well attended to as a garden plot. The depth of the plowing is very important, and ought in no case to be less than 10 inches, but 14 is better in order that the roots may penetrate to the greatest depth, for on the length of the root depends tonnage. The preparation for the seed bed depends greatly on the nature of the soil, but it must be by all means firm and compact, for in this State it will retain the moisture better and the seed will germinate quicker, but especially will this prove of great benefit if the land is plowed but a short time before seeding. In fact then, your ground should be worked down every day as fast as you can plow it.

Early Work.—The planting should be done as early as possible. At Chino, I think, the proper

time is from February 15 to April 15—in fact, in every case as soon as the land is dry enough to be worked.

In the majority of cases late planting is responsible for a light crop and sometimes for a total failure. We farmers in Chino should fully realize this fact, as it is forced upon our attention every year, and the worst of it is, we do not profit by past mistakes, but still continue to follow late planting.

The next step is cultivating and thinning, which is also of great importance, as every step in beet culture is, but unfortunately we do not attach much importance to it. A beet field must be free from weeds at all times, and the best and cheapest way to keep it clean is to "take time by the forelock" and cultivate it before the weeds start. Here is where most failures occur, and if weeds are allowed to get a start it will involve much unnecessary and expensive hand work. Thinning should be done as soon as the third or fourth leaf appears. If left too long, the roots will entwine around each other and make it detrimental to the plant that is left, and often the largest and most thrifty beet is pulled out and the small weak beet left. The distance should be gauged according to the strength of the soil—the richer the soil the closer the beet—but in very few cases should the distance be less than a foot, and even such a stand will give 30,000 beets to the acre, and if they weigh only one pound each will give fifteen tons to the acre, with a minimum price of $4.25 per ton, or $63.75 per acre. So let us strive to do our work well, for in no other way can we expect the best results.

Of course, we realize that the unfavorable climatic conditions of the past three years has been a great drawback to the beet industry in Chino, but we hope the time is not far distant when we will have a well-developed irrigating system for our semi-moist lands and a system of drainage by ditches for our low lands. In no other way can we establish the beet industry in this locality on a sure basis.

THE DAIRY.

Advantages of Dairying.

By H. S. Bachman at the Farmers' Institute at Porterville.

While I do not profess to know much about dairying, I am satisfied that, in the near future, Tulare county will be one of the greatest, if not the best, dairy counties in the State, and while I must confess that the opportunities for successful dairying have been much neglected in the past, at present there is more attention being given to that industry than at any time during many years. If we will but consider the many advantages we enjoy in this State and particularly in this county, when compared with other States, and other counties in this State, the wonder will be that there has not been more attention given to this industry in connection with diversified farming than has heretofore been the case. I do not believe that there is any county in the State where feed for milk cows and cattle is as cheap as it is in Tulare county, and, if dairying is carried on as I understand it is with a good profit in Los Angeles and other counties where hay is worth from $8 to $15 per ton and land worth $100 and over per acre, I can see no reason why it should not pay well here when any amount of hay can be bought at $5 or less per ton, and good land, suitable for raising alfalfa and corn or other feed, can be bought at from $20 to $50 per acre. Of course the greatest objection most of our farmers have to the dairy business is its being confining. Cows must be milked twice a day, Sunday not excepted, and the business must be attended to promptly, but, while it is every day work, it is also work which is every day pay.

In the dairy business the money derived from the sale of the cream is not the only revenue by any means. The milk is sold to a creamery and the skim milk returned. There is the money from the calves and hogs which amounts to a nice sum in the course of a year, and which should be at least $15 per cow each year in addition to the money received from the sale of butter or cream.

Also, since the establishment of creameries through the country, one need not be an expert butter maker to be a successful dairyman, for he can find a ready sale for all his cream at fair prices without making it into butter, although, like all other business, one cannot know too much about it. As for myself I think that the best and most successful plan is, especially in this warm climate, for each dairyman to have his own separator and separate his milk at home, and then either sell his cream or make it into butter at his option. He then has his milk warm from the cows to feed the calves and hogs, and not milk that has been hauled, perhaps for miles and sour (in the summer time at least) when he gets home, and, in consequence, he can raise better calves than by taking his milk away from home to have it skimmed. Then he can take better care of a small quantity of cream and keep it cool and in good condition to be delivered in good shape to the creamery than he can the milk that the cream comes from, while the expense of delivering is not as great, and, also, one person could gather up the cream from an entire neighborhood instead of each one taking their milk to the creamery at a great loss of time. This is the system now being used with the best success in the Eastern States, and is sure to be the one adopted here eventually, as most of the farmers are too far from skimming stations or creameries to make any other way profitable. But when we think that in States like Wisconsin, Dakota, Minnesota, Ohio and, in fact, all of the Western and Eastern States dairying is carried on at a good profit with prices for butter no better, if as good as they are here, with all they have to contend with in the shape of cold winters and high-priced feed, we surely ought to make a grand success here with our alfalfa and cheap feed and one of the finest climates in the world both for man and beast.

The main thing needed, though, to make a success of a dairy, is good milk cows. One need not expect to take the common range cows and have good dairy cows any more than a person would take fine race horses to make a draft team. They must have cows suitable for the purpose for which they are intended.

THE POULTRY YARD.

Hints for the Season.

To the Editor:—This is the age of trusts. On every hand combinations are made to the advantage of the persons directly concerned. Every class seems to be interested in this movement except the farmer. He prefers to hoe his own row and to act independently.

But our thoughts are, just now, of the poultry farmer, or of the specialist. Here there is no combination, nor is there any danger there will be. Such a thing as an egg trust, or combination, can never be formed. Therefore the producer can be assured of getting fair prices, at least, at all times. More than this, if he be a man, or woman, of a practical turn of mind, a first-class rate of interest will be realized from investment made in this business.

The egg farmers of California are naturally jealous of the Eastern shippers of poultry and eggs, wishing that they would keep their supplies at home. But with all the competition that can be made there is good money in poultry farming for all residents of our State who are disposed to engage in it. There always will be. The consumption of eggs and poultry in this State is enormous. Wise investment in this direction will ever be profitable.

But one must be well posted in the many details of poultry raising to succeed. Not every one who tries the venture can boast of success. Scores try, make a partial failure the first season, and then give up for want of courage to persevere till they conquer the difficulties that beset their path.

The Season's Work.—Incubators are closed for the season and laid aside for a few months. Some persons have had good hatches; some had poor. Many who tell of a good output say that their first hatches grew to be strong, healthy birds, but report discouraging results fron their later hatches. They who are wise will profit by the mistakes of this season in the future, if their memory serves them well, and another year will have better "luck." Even those persons who have been in business for a score or more years say they learn something each succeeding season.

One is often tempted to put "just one more hatch" in the incubator, and the machine is filled late in April or in May. Hot weather soon comes on, many conditions are not so favorable as earlier in the season and the little chicks "turn light," droop and die—at least many do. In the great majority of cases it does not pay to hatch late in the season. It must be remembered that our season, here in California, is two months earlier than in the far East. Seasons vary with the latitude. We say we will not take out late hatches another year, and yet another year the same experience will be repeated.

Will it not be policy to confine our hatches to the months of January, February, March and April? Recount your own experiences and, with the past in mind, make plans for the future.

Feeding.—The question of proper food for the young chicks is a momentous one, for if mistakes are made here the resultant evils cannot be counteracted. Indigestion slaughters thousands of the innocents yearly. This difficulty obviated for the first three weeks and a great danger is past. But to feed just the right thing at the right time, and not too often or in too great quantity, are things that we do not always do. Feeding too soon after the chick is hatched and too much is undoubtedly the cause of the death of countless innocents. All this must be guarded against. But many a chick dies from the attacks of vermin whose taking off is attributed to improper feeding, if, indeed, any cause is assigned. Lice work so silently, hidden away as they are in the feathers of the victims. If one could only see them, could only be sure that they were the cause of the sleepy attitude the chicks often assume, why then one would know at once what to do.

Even incubator chicks are subject to the attacks of lice. This may seem strange to some, but if there are older fowls about the premises the vermin will, in some mysterious way, get on the youngsters.

If they appear sleepy, standing around as if they had lost all ambition, eat little and seemingly tired of living, look on the head for the blood suckers that are probably sapping the life of your pets. The very first thing to do is to grease the heads of the chicks with a drop of lard, vaseline or any fresh grease, also putting a little under the wings and under the throat. There are many evils we have to contend with in the poultry yard that we may subdue, overcome. The fight against lice is a never-ending one.

Napa, Cal. A. Warren Robinson.

Handling Young Turkeys.

Although it is getting rather late for immediate use of the suggestions conveyed in a letter which a Nebraska turkey grower writes for the Breeders' Gazette, there are some points which it will do to remember until the time comes for their use. The writer says her success with turkeys was admirable—exceeding her expectations.

Beginning.—I began in a primitive way—with only three birds, but they were fine ones of the large bronze variety. The hens begin laying about the middle of March and the eggs should be gathered daily, as cold nights are apt to chill them and render them unfit for incubation. As soon as enough eggs are procured I put them under hens (chickens), preferring to set two at the same time that I may give all of the poults hatched to one hen and taking care to select hens that are quiet and do not object to being "managed."

Hens for Hatching.—Select a quiet place for a nest and dust it well with insect powder. If the chicken hen is large she will cover ten eggs, and watch carefully that other hens do not disturb her. Within three or four days of the time to hatch sprinkle the eggs well with clean warm water at about 100°. This will insure the dampness that assists greatly in the success and active process of hatching. Unless the hen is quiet I would advise, as fast as the little ones hatch and become dry, taking them from the hen and placing them in a basket in which a warm flannel cloth has been laid, then leaving them in the basket until all eggs are hatched. This I do to avoid having any smashed, for on your success with the little ones depends in a great measure your success with the grown flock.

Rearing.—When all are hatched place the mother hen in a coop in a quiet place away from all other fowls, as other hens are sure to kill the young poults. Do not give food for twenty-four hours, and then sparingly at first. A great many more young turks, I believe, are killed by overfeeding than otherwise. Bread crumbs soaked in fresh milk and a curd made from thick sour milk, with a liberal sprinkling of black pepper, I would advise to be fed for the first week. Then may be added all table scraps. Vegetables, lettuce and such, chopped and mixed with their food, give excellent results. Cornmeal may be fed mixed with ground oats and baked, otherwise I would not recommend it.

Care.—Cleanliness is of the greatest importance. Always keep fresh drinking water within reach, but in no case allow the poults to get wet by running through the wet grass on a rainy day or early in the morning when the dew is on it. It is a good plan to put a board in front of the coop at night, protecting them from small vermin, and removing it in the morning after dew has disappeared. After the poults are four weeks old, on pleasant days the mother hen may be let out to run at will with her brood, but do not neglect to coop them before dew falls.

But one thing from the very first and of the greatest importance is that of a certainty at all times they must be free from lice and mites, which are most fatal to young poults. One should be on the constant lookout, for these pests appear as if by magic on the little turks when all other fowls and young chickens seem to be free from them. They are most troublesome around the head and the wings where the flight feathers start. Every few days they should be examined carefully. A little pure lard rubbed on the head and wings is a simple and effective remedy, but too much is absolutely fatal.

The young turks grow very rapidly after the first few weeks and with what voracious appetite they devour their food! But in return they soon get strong and sturdy, well able to forage and protect themselves.

THE ORNITHOLOGIST.

The Turtle Dove and Clover Seed.

To the Editor:—I have received a letter from E. Dunlop, Jr., of Diamond Springs, El Dorado county, in which he accuses the turtle doves of doing an injury to his pasture land by eating clover seed. I

do not exactly understand the conditions under which the damage is done, but should infer that the birds eat the ripened seed upon which, self sown, he depends for a future crop of clover. The same complaint has been made by farmers of Tennessee, but in that case the seed eaten was that which they had sown.

The turtle dove is one of the greatest, if not the very greatest, seed eater of any of our American birds. Of all the species of birds whose stomachs I have examined none were so exclusively vegetarian in their food habits. In something more than one hundred doves' stomachs whose contents were investigated, about one hundred species of seeds were found, exclusive of grain. In view of the complaint of the Tennessee farmers special care was taken to identify all clover seed with the somewhat surprising result, however, that it was found in only one or two stomachs, and only to the extent of less than a dozen seeds. This, however, does not prove that doves will not eat clover seed when they can find no other food, or at least none that they like better. From Mr. Dunlop's letter I infer that he has killed doves and found their crops full of clover seed. Doves also eat a vast amount of seed of noxious weeds, and are thereby rendering a service to the farmers who believe in clean culture. Like all other birds, however, they eat what they like best of the available food supply, so that they often eat newly sown grain to an injurious extent.

I presume Mr. Dunlop would like to have me suggest some remedy for the evil of which he complains, but I confess I have none to offer. I do not like to advise a wholesale destruction of the birds, nor do I know of any safe means by which it could be accomplished, even if desirable. I am inclined to think, however, that the injury is one that is likely to grow less in the course of time. In a country that is constantly becoming more densely populated many species of birds will in time be much reduced in numbers, more especially those that have a tendency to associate in flocks, like the doves, and in a few years it is probable that the "droves" that now visit the fields will be much reduced in numbers, if they do not entirely disappear. F. E. L. BEAL.

Haywards, June 21.

We are glad to have this note from Prof. Beal. The great importance of Mr. Dunlop's indictment of the doves lies in the fact that we have in this State so many indigenous annual clovers and some others of like habit introduced. They make rich winter pasturage, but are of course liable to run out by grazing, and if the prevention of seeding caused by the stock is supplement by seed destruction by birds, these plants have little chance of surviving and our pastures become poorer each succeeding year.

PROF. BEAL'S WORK.—Prof. Beal is temporarily at Haywards and we are glad to know that his investigation is proceeding very satisfactorily. In a private note to the editor, which we take the liberty of printing for the important news it contains, he says:

I am still making my headquarters at this place, though I have visited many other places on this side of the bay. I am led to believe the conditions here to be typical of a large portion of the central part of the State, i. e., as far as relates to fruit and birds. I feel highly pleased with my success and feel that I am getting at the very facts that I need in my future work. Next week I expect to take a wagon trip from here to San Jose, taking in all the best fruit growing sections on the way. I have you to thank for having put me on the right track. I hope and expect to have the pleasure of meeting you again before I leave the State.

FORESTRY.

Observations in California Forests.

By J. J. DOYLE at the Farmers' Institute at Portervlle.

In presenting this very important subject to the Farmers' Institute I will simply try to present the facts as I have learned them from experience and close observation in the past seventeen years.

Seventeen years ago the 10th day of last October I located 160 acres under the Timber and Stone Act of June 3, 1878, being the first location in the Bear Creek forest, and I think the first location under that Act in the U. S. Land Office at Visalia. Since that time I have been directly and indirectly interested in the forest in the Sierra Forest Reserve, Tulare county, California. Since that time I have caused to be made about 25,000 redwood posts and about 1,000,000 sugar pine shakes, two species of timber that grow in the State of California, which is the last we have. It is somewhat amusing to me now—since I have become acquainted with the different species of timber—to look back to the time when I entered the Bear Creek forest, not knowing a cedar from a redwood and not knowing the difference between a sugar pine, a yellow pine or a fir, but supposing of course that I had seen only redwood and pine and thinking that every tree that I had seen in that dense forest was good milling timber. Since I have become better acquainted with that forest, which is similar to the other forests in the Sierras, I find the milling timber for lumber about 25% redwood; 45% fir; 20% sugar pine; 10% yellow pine. I also find that we have about fifteen species in the Sierras of valuable wood, which ought to be and must be protected, and I think the best way to protect them is to put ourselves in a position to use them.

The Bear Creek forest was located in 1883, and in 1884 our County Fathers in their wisdom constructed a wagon road to that forest, and since then other roads have been constructed, and I feel safe in saying that, including all kinds, there have been 15,000,000 feet of lumber hauled over these roads, making a saving to the people of Tulare county of $30,000 at least, whereas the wagon roads all told have not cost over $15,000. Beside it has very materially increased our taxable property in that vicinity. The wagon road that the county constructed not reaching my timber by about 2 miles I constructed a wagon road to my place, and the first six years I made about 35,000 redwood posts and about 600,000 pine shakes, all made out of down timber, i. e., timber that I found lying on the ground preparing fuel for the forest fire that may come along to not only destroy the fallen timber, but being the means of destroying the standing timber as well.

Little did I think when I entered that forest seventeen years ago and was viewing those magnificent trees, that about 20% of the trees standing were not fit for milling purposes at all, for the simple reason that they had arrived at the age of maturity, and were on the decline, and the trained eye of the sawmill man could detect this, and the consequence is that they are passed by and left to go on with decay, and in a few years they will fall and in the descent will take down young and thrifty trees that may be in the way.

Again, in wandering through these forests you will find many trees that have arrived at maturity, and younger ones, too, with the top broken off, leaving a large trunk standing with 4000 or 5000 feet of good lumber in it, and you cannot understand what is the cause of this, which I intend to explain. The forest tree, as well as other trees, is the most brittle in the spring, just after the sap begins to flow, and in the mountain forests we have snows very late in the spring—in 1894, the 15th and 16th of May, 30 inches of snow fell in the Bear Creek forest. These snowstorms are generally preceded by a rain which wets the leaves and branches so that the snow adheres to them, and the result is in many cases a broken tree, and a further result is, where there are no roads or mills, a total loss.

It may be said that the building of wagon roads into the forest is the cause of their destruction. This no doubt is in a measure true, but it only is true where the land is purchased for the timber on it, and in such cases it is generally destruction and not protection. But in the case of the government forests, of which there are several, I will cite the Giant forest for illustration. It has never been my privilege to visit that great forest, but I have heard and read a great deal about it. It contains about 6000 acres, being the second in size in the Sierra Nevada mountains—the Converse forest on the Kings river being the first—and I presume judging from the other forests it contains about 6000 redwoods and about 12,000 sugar pines, and I dare say you would find 150 redwoods lying on the ground that would make 250,000 good fence posts, which could be readily sold for $1.50 per hundred posts "stumpage," and I dare say you will find 200 sugar pine trees lying on the ground, and if not too much decayed they will make 2,400,000 shakes that can be sold for $1.50 per thousand "stumpage," if there was a good wagon road to that forest.

I mention the redwood and sugar pine because they can be worked into lumber without a mill, besides there are the tops of these trees, and the many hundred firs, yellow pines, black oaks, etc., that would make many million feet of lumber if there was a sawmill at hand. This could all be accomplished if there was a good wagon road to that great forest. I feel from my knowledge of these forests that I have made a very conservative estimate of this matter, and when the Kaweah colony road is completed to the Giant forest it will not only be a protection to that forest, but will return a revenue to the government if properly managed.

About eleven years ago I constructed about 9 miles of worked trail in Sierra Forest reserve. I had the brush cut out on an average of 8 feet wide, which ought to have been at least 12 feet, and on several occasions since then it has been my pleasure to see the forest fire checked by my trails. Had it not been checked many hundreds of acres would have been burned over.

In conclusion I would say, if the government wants to protect forests let it construct wagon roads and trails in the mountains, and then it will in a great measure be accomplished.

THE great plow combine has been practically completed, at a meeting held recently in Chicago. The company has not been incorporated, but will be within a month. The capitalization probably will be about $75,000,000, divided into common and preferred stock, the proportion likely being $35,000,000 preferred and $40,000,000 common.

HORTICULTURE.

The Uses of Suckers.

By ERNEST DODGE, Lamanda, in the California Cultivator.

Watersprouts or suckers are the result of a disturbed equilibrium of the plant; and the formation of watersprouts is influenced more by the vigor of the plant and the amount of pruning than by the season of the year in which the pruning is done (Bailey). They are also caused by over-fertilization, which disturbs the equilibrium of the plant by giving the roots a great advantage over the top. These are perhaps the two most important causes of suckers.

USES.—When a tree is in good condition regarding its shape and fruitfulness, suckers are parasites and ought to be removed. But if the equilibrium of a tree has been disturbed by pruning, then suckers may be of use to the grower in helping him obtain the shape he desires. Reference to this use is made in Mr. Baronio's article on lemon pruning in "The Culture of the Citrus." In such a case a sucker is endured to remain in the place where a branch is desired. Then, after it has attained the length of about 12 to 18 inches, it is cut back a third or a half to a horizontal bud. This bud and the one below it (which should preferably also be a horizontal one) will develop into shoots. This scheme is continued by cutting the two shoots developed to such a length as will harmonize with the shape of the whole tree. By judicious pinching, fruit can be made to appear by the second year, and often sooner.

It is, unfortunately, true that not all suckers respond so willingly to this kind of treatment. But we find the same condition of affairs in all things—trees, animals and human beings. Some balky horses became useful when under the care of a competent driver—but not all. This unwieldy class, however, cannot be considered. Many suckers only appear "incorrigible," that is by a little tieing and pinching they will reform and become useful fruit-bearing branches.

MORE USES.—Suckers aid in the construction of trees. In the after treatment of pruning under any system, suckers serve to strengthen the weaker branches. By being allowed to remain on the feeble limbs they act as attractions for the sap, and by their own development increase the size and vigor of the whole branch. Collectively, suckers aid in balancing a tree. That is, by letting all the suckers on the weak side remain, and removing all on the strong parts, the suckers will draw an extra share of food to the weaker parts; and the vigor they impart lives after them when they have accomplished their purpose and have been removed.

A CONVERTED SUCKER.—A sucker that appears where a branch has no other foliage can sometimes be converted into a fruit branch by proper pruning. To accomplish this, the sucker should be pruned short as soon as its buds are well developed, so that four or five buds will push forward and produce several small branches in place of the sucker. There being several shoots to be fed, none will be as vigorous as the original sucker was, and by pruning these shoots long they can soon be converted into fruit-bearing wood. An attempt of this sort will at times turn out a failure too, but I have some fine specimens on some lemon trees that were pruned to the open-center horizontal system.

On the inner parts of trees suckers are seldom of value, except to close the tops of open-centered orange trees, because they do not become sufficiently strong to be of any service. As they are caused by a disturbance of the tree, they die or become very feeble when the tree returns to its normal state, because they only act as safety valves for an oversupply of energy. It may be due to this fact that in districts where trees are occasionally heavily fertilized, "removing dead wood" becomes a regular expense. The few suckers that do develop and even become fruit branches on the inside of the tree have very little as well as unhealthy foliage, on account of the exclusion from light and unfortunate position, and are more of an encumbrance to management than an aid in fruit production.

PREVENTION.—In cases where suckers can be of no value it is possible that by careful treatment of the tree their occurrence can be somewhat held in check. I would suggest frequent, regular and small applications of both fertilizer and water wherever this is feasible, and steady light pruning rather than an annual removal of both large and small objectionable parts.

When a sucker is removed a clean cut, even as possible with the part from which it was taken, is desirable. This prevents the unsightly and permanent stumps, and the sprouts that sometimes arise from such stumps. It also insures the quick and altogether satisfactory healing of the wound.

ACCORDING to the statistician of the Department of Agriculture, California has reported the same acreage of clover (alfalfa) this year as last. The fact is our alfalfa acreage is increasing very rapidly and this year's new seedings were very large.

THE HOME CIRCLE.

Innocence.

Now the colt is gaily skipping
Where the happy zephyrs zip,
And his uncomplaining mother
Stands aside to let him skip;
With a blissful satisfaction
Now and then he hoists his heels,
And a dozen times an hour
Stops awhile to take his meals.
Oh, he doesn't know that men are lying
bleeding in the ditches,
And he isn't causing trouble by his greed
for worldly riches;
Not a care is on his mind
As he rises up behind
And permits his lengthy legs to lightly
dangle in the wind.

Oh, the spotted calf is tugging
At its rope, behind the shed,
And displaying wild impatience
And imploring to be fed;
Now the farmer's wife approaches,
And she bears a brimming pail,
There's a frisk of satisfaction
In the bady bossy's tail;
With his nose he bumps the bottom and
he sends the bubbles flying,
And he skins the lady's knuckles, and she
cuffs him, sadly sighing,
But the bossy bumps away,
Knowing not that men to-day
For a little shining metal steal and strive
and scheme and slay.

Oh, the lambkins gaily frolic
In the seven-acre lot,
With their lunches always ready
To be taken on the spot;
And the pig that went exploring
Sadly run's along the fence,
And is sending up a protest
That is mournful and immense,
While his brothers and his sisters, with
unbounded satisfaction,
Turn and line up in their places and forth-
with get into action,
Caring nothing for the old
Worldly struggles after gold
In the markets where men's honor and
their lives are bought and sold.

—Chicago Record-Herald.

Tommy's Fourth of July in Ireland.

As Tommy swung for the twenty-third time on the gatepost, he remembered something.

"Cracky!" was all he said. Then he bounded away between the hedge rows so fast that the sheep in the pasture looked up in surprise. But Tommy paid no attention to them. He made straight for the long, low farmhouse, and darted through the kitchen into the dairy, dancing about like a little Indian, and waving his cap above his head.

"Mother! mother!" he cried; "do you know what day it is?"

"Tuesday, my dear. Tommy! be careful, my son, or you will upset the cream."

"But, mother, what day of the month is it? That's what I want to know."

"Let me see," said his mother. "First, second—oh, it's the fourth."

"Fourth with a capital F! Fourth of July! And we must celebrate. May I have some money for firecrackers and punk and a few other things?—you know, everything for Fourth of July. May I, mother?"

"Firecrackers in Ireland, Tommy? I am afraid you won't find any. I had forgotten to-day was the fourth; but we must do what we can to celebrate, certainly. Take a shilling or two from my purse and see what you can find that will make a noise."

"Oh, they keep firecrackers at Dempsey's," said Tommy, confidently. "Everybody over here likes America so much they will be sure to celebrate a little, I guess. I'll get a few torpedoes and things, and then I'll get some of the boys over, and show them what Fourth of July is like."

"Tommy," said his mother, looking fondly at the excited little fellow, "where are we spending the summer?"

"In Kilkenny county, Ireland," answered Tommy, promptly.

"Well, my son, here they do not parade the streets singing 'America' on the Fourth of July, even to make little boys happy; so don't set your heart on that. Run down to Dempsey's after your crackers, and if you can't get them we'll try to think of something else."

Tommy was ten years old. He had come to spend the summer on a big, prosperous farm not far from Londonderry, and the first three weeks of his life there had been full to the brim with delights. Everything was new, and, as he expressed it, "funny;" but, though he had no fault to find, nothing quite came up to the things at home, and America was growing larger and more wonderful in his memory, and in his speech, every day. He revolved several of its glorious features in his mind as he ran down the lane; they seemed to be a confusion of hurdy-gurdys, military funerals—which Tommy particularly admired, and which he looked upon as pertaining to himself, in a measure, since he meant to be a general—police patrol wagons and the "Star Spangled Banner." This last brought to his mind the fact that he ought to have his flag; so he turned back long enough to get the little silk emblem his father had given him before he sailed from New York, and then he set out once more for Dempsey's. It was a long walk, so the better to break up the tedium of it, he sat down behind the last hedge row of Squire Burke's farm to make out a list of the things he wanted. First, there was the bothersome task of finding out how much money he had. He spread out the coins in his handkerchief, and, pulling out his notebook, put down, as he used to do in school:

£	s.	d.	halfpence.
0	2	3	1

"Now, let me see," he said, figuring; "that is: no dollars, 50 cents, 6 cents and 1 cent.

"Fifty-seven cents," he announced, pretty well satisfied. "Now, crackers are 5 cents a pack, I suppose; and I'll get two packs and three giant crackers—that's 25 cents. An' the rest I'll put into punk and fireworks. It won't be such a bad Fourth of July after all."

But, alas! for Tommy's hopes. Dempsey had no crackers, no giant crackers, no torpedoes, no fireworks, no punk.

Tommy was indignant. "Why, Mr. Dempsey," he said, "in America every little country store not half as big as this keeps firecrackers."

"I don't doubt you, sir," said Mr. Dempsey, with a twinkle in his eye; "but, you see, I am not in America. I took a notion once to keep fireworks, but I was always having to set them off for samples, and they'd not make much of a show in the daytime, so nobody 'd buy; and there I was spending money to entertain the public, as if I was a squire giving a public holiday to my tenants. And that was not respectful to the gentry, as you can understand."

But Tommy did not understand, and he was very much disappointed.

"Haven't you anything that will go off and make a noise?" he urged.

Mr. Dempsey thought he had not, since Tommy was not allowed to use a gun. He was very sorry. Wasn't there anything else he could show him? Tommy shook his head and turned away, crestfallen and unhappy.

He traveled slowly up the long hill on his homeward way, casting about in his mind to find a way for celebrating. But he might—yes, he might have a bonfire! Of course! Why hadn't he thought of that before? All the boys would help, and they could roast potatoes in the ashes, and pretend it was a barbecue. The thought brought the smile back to Tommy's face, and a merry tune to his lips, and he swung along the highway, making such a noise himself that he did not hear approaching music until he had nearly reached the top of the hill. Then he stood still, the whistle dying on his lips, his eyes as big as moons. Could it be? It was! Undoubtedly the stirring, soulful music of a fife and drum was coming towards him from the other slope of the hill.

Tommy sped like a rabbit to the brow of the ridge, and scrambled up to the top of one of the great gateposts at the entrance to the squire's park, the better and sooner to see. Presently there came into view a horseman in uniform, then another soldier, then a third, and at last there tramped into the little American's glorified vision a company in full regimentals. Tommy's heart stood still and he gave himself the order:

"Don't fire until you can see the whites of their eyes!"

It was glorious sport to be for a moment the American army on Bunker Hill. His teeth set and his breath came hard as the lines advanced, and he waited for the order to fire; but he was brought back to reality by hearing the sharp command:

"Halt!"

The troops, having reached the top of the hill, halted and came to a standstill directly in front of Tommy's reviewing stand. He felt that he could not repay them for their kindness; but he wanted to do what he could, so he pulled off his cap and waved his American flag at them, shouting lustily: "Hurrah! Hurrah!"

The captain, a young man with a fine mustache and merry eyes, rode up and said:

"Where did you get that flag, my boy?"

"I brought it from New York," answered Tommy, proudly, glowing with the pleasure he felt in being spoken to by a man who wore such a splendid uniform and rode such a prancing, beautiful horse.

"This is the Fourth of July, you know," Tommy went on, "and I can't get even a firecracker at Dempsey's. What do you think of that?"

"Firecracker!" exclaimed the officer, laughing; what do you want of a firecracker?"

"Why, everybody shoots off firecrackers in America on Fourth of July! Don't you know that?" asked Tommy; "and I want to do something to celebrate. I am glad you came along, because this seems like a real Fourth of July parade at home, and to-night I can have a bonfire, and roast potatoes—but that's not really as good as firecrackers."

"No, certainly not," the officer assented. "But why do you celebrate the Fourth of July? Is it the President's birthday?"

"It's Independence Day," exclaimed the surprised Tommy—"the day the Declaration of Independence was signed."

"Independence? Of what?" asked the officer, very much interested.

"The United States declared themselves independent of England," answered the boy stoutly. "She shut up Boston, and put a tax on tea, and—and—lots of things."

"I see," said the officer. "But do you think it is right to wave the American flag at the British Army? Her Majesty the Queen may look upon it as an unfriendly act on the part of Uncle Sam."

"Oh, the Queen is all right, and so is the British Army!" said Tommy, graciously; "and I don't believe the Queen would mind my waving the American flag, because it's Fourth of July; and, besides, when you see soldiers — well, you just must wave something!"

The officer laughed outright and held out his hand.

"You are quite right, Uncle Sam," he said. "I don't believe the Queen would mind. She admires loyal subjects in any country. Hold up your flag!"

Tommy waved the Stars and Stripes above his head. The officer wheeled about, faced his men, and gave the order: "Attention! Right face! Carry arms! Salute Uncle Sam and the American colors!"

The company saluted, though not without a look of surprise and a smile as it took in the situation. But Tommy saw neither the look nor the smile. Standing on the broad top of the gate post, the colors floating above his bared head, he was the nation's standard bearer, and conscious only of his dignity.

"Uncle Sam," the officer said courteously, as the arms of the soldiers were brought again to rest, "my men would be gratified if you would acknowledge the salute by a speech."

Tommy straightened himself upon his stand, and telegraphed to all parts of his mind for an idea. Then he bowed slightly and began:

"Gentlemen and fellow citizens: I am much obliged to you for your salute. It came in finely on Fourth of July. I am much obliged to, and—and if you ever come to America, I will do all I can to get up a parade for you on St. Patrick's Day!"

Every helmet came off, and a shout greeted Tommy's climax. Three rousing cheers followed that, and three more. The officer saluted Uncle Sam, and Tommy returned the salute as nearly as he could, the company wheeled into line, and, a moment later, mingled with the tramp of many feet, there was borne to Tommy's tingling ears the strains of "My Country!" It was the last drop of joy in an overflowing cup, and in the exultation of the hour he sprang to do handsprings on the grass. What matter if to British hearts the tune was "God Save the Queen?" To Tommy it was "My Country, 'tis of Thee," the greatest land in all the world, in Tommy's thoughts, and to which he supposed the whole earth paid respect on her glorious birthday, the Fourth of July.—Annie B. Jones.

Queer Facts.

The average cost of land in southern Germany suitable for tobacco culture is $127.50 a Hessian morgen, which is equal to three-quarters of an American acre. The total cost of production is $35.55 a morgen.

It is proposed to illuminate the Yosemite falls, 2000 feet in height, by use of twenty arc lights, in connection with means for producing color effects. Some of the roads are also to be lighted with electricity.

The modern long-range military rifle, it is asserted by a physician who has served in the army, will tend to develop near-sighted soldiers. The strain upon the eyes in trying to distinguish an object a good mile away is too great.

In order to preserve the colors of plants it is necessary to kill the specimens quickly; and this can be effected by plunging them for a few seconds in boiling water. If a plant is allowed to die slowly the colors of the leaves and flowers will gradually fade.

Germany, although it has 35,000,000 acres of forests, excellently managed and yielding an immense revenue, demands increasingly greater quantities of wood, so that for the last ten years the amount of timber which it buys has doubled, and its value trebled.

Ireland lost 45,288 people by emigration last year. This is an increase over 1899 of 3347. Over 82% of these were between the ages of fifteen and thirty-five. Of the total number of emigrants 37,765 came to the United States, Great Britain received 6050, New Zealand 64, Canada 472 and Australia 834.

The latest convenience in the New York apartment is a private safe, built into the wall, and so arranged that only the tenant is acquainted with the combination. This makes it possible for the flat dweller possessing valuable silver, jewels and papers to keep them in his apartment instead of in the vaults of the safe deposit or the bank.

A number of young filbert trees have been sent to the Agricultural Department from Greece. The nuts from these trees are the largest and have the finest flavor of any filberts the department has yet discovered, and every effort is to be made to encourage their growing. Some fine specimens of the English walnuts have also been lately received, some of them being several times as large as the ordinary white walnut.

The most durable paper is made by a guild near Nanking, China, which supplies the government of that empire the leaves of its official documents. Some of these are over 1000 years old. Fireproof paper made of asbestos is another kind of greater durability. The drawback to them, however, for printing purposes is, that although they will pass through the fire unscathed, they come out snow white, without a trace of the printed letters or writing that was on them.

Merely an Eye Wash.

Tears have their functional duty to accomplish, like every other fluid of the body, and the lachrymal gland is not placed behind the eye simply to fill space or to give expression to emotion. The chemical properties of tears consist of phosphate of lime and soda, making them very salty, but never bitter. Their action on the eye is very beneficial, and here consists their prescribed duty of the body, washing thoroughly that sensitive organ, which allows no foreign fluid to do the same work. Nothing cleanses the eye like a good, salty shower bath, and medical art has followed nature's law in this respect, advocating the invigorating solution for any distressed condition of the optics. Tears do not weaken the sight, but improve it. They act as a tonic on the muscular vision, keeping the eye soft and limpid; and it will be noticed that women in whose eyes sympathetic tears gather quickly have brighter, tenderer orbs than others. When the pupils are hard and cold the world attributes it to one's disposition, which is a mere figure of speech, implying the lack of balmy tears that are to the cornea what salve is to the skin or nourishment to the blood. The reason some weep more easily than others, and all more readily than the sterner sex, has not its difference in the strength of the tear gland, but in the possession of a more delicate nerve system. The nerve fibers about the glands vibrate more easily, causing a downpour from the watery sac. Men are not nearly so sensitive to emotion; their sympathetic nature—that term is used in a medical sense—is less developed, and the eye gland is, therefore, protected from shocks. Consequently, a man should thank the formation of his nerve nature when he contemptuously scorns tears as a woman's practice. Between man and monkey there is this essential difference of tears. An ape cannot weep, not so much because its emotional powers are undeveloped, as the fact that the lachrymal gland was omitted in his optical makeup.—Dietic and Hygienic Gazette.

His Master's Sober Request.

The policeman had given his testimony, which was unqualifiedly to the fact of the old gentleman's intoxication. Then the old servant was called to the witness box. There was a mingled expression of indignation and determination on his countenance. He testified flatly, to the surprise of the court, that the old man was sober when he came home. The magistrate proceeded to question the witness.

"You say that Mr. —— was sober when he came home?"

"Yes, sir."

"Did he get to bed alone?"

"No, sir."

"Did you put him to bed?"

"Yes, sir."

"And he was perfectly sober?"

"Yes, sir."

"What did he say when you put him to bed?"

"He said, 'Good night.'"

"Anything else?"

"Yes, sir."

"What was it? Tell us exactly what he said, every word."

"He said as how I was to wake him and call him early, for he was to be the queen of the May."

The old man was fined.—The King.

THEY were looking through the library.

"If you had the divine gift, what would you rather write?" asked the romantic young woman.

"Checks," replied the sordid young man.

'Tis now the time of rod and reel,
Of lending nets and flies,
Of wasted piscatorial zeal,
Of long, luxurious lies.
—Philadelphia Record.

In southern France, where beer costs 20 cents and milk 15 cents a quart, new wine has been lately on sale in unlimited quantities at 2 cents a quart.

A Formula of Painful Memory.

Last Monday a woman who lives on Morgan street took her five-year-old son to a photographer to have his picture taken. She was anxious to secure a good likeness at this particular sitting, because she wished to distribute the pictures among some friends who were then her guests.

The child's idea of the affair, however, did not, apparently, harmonize with that of his mother; for when the man with the camera began to adjust the lens and direct it toward little Edward, that young person set up what was unquestionably a howl.

In vain did the mother call into use her utmost forensic abilities. Edward did not want his picture taken.

"Why, my child," she said soothingly, "the gentleman won't hurt you. Just smile and keep still a moment and it will be all over before you know it."

"Yes, I know, mama," whimpered the youth, with tears running down his cheeks, "but that's what you told me at the dentist's."—St. Louis Post-Dispatch.

DOMESTIC ECONOMY.

Domestic Hints.

VIRGINIA BEEF.—Put a boiling piece of beef in a large, flat kettle with two onions chopped fine, and two tablespoonfuls of butter; sprinkle all over with flour. Let onions and butter cook a few minutes before adding meat, which must be well seasoned with salt and pepper. Add one pint of water, cover tightly to retain all the juices and steam; and cook four hours. Then add a few mushrooms. Stir into the gravy a tablespoonful of catsup. Pour over the meat and serve hot. The meat should be cooked until it can be cut with a spoon.

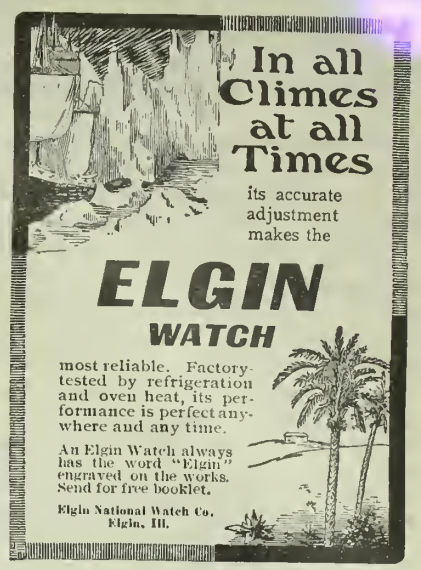
RICH BROWN STEW.—Two pounds of beef; carefully trim off all the skin, and cut into pieces one inch square. Dredge all the meat thickly in flour, and brown a little hot butter in a stew pan. Add two tablespoonfuls of flour to the fat, stir till browned, add one pint of stock, one bay leaf, one small onion stuck with cloves, one tablespoonful of salt and a seasoning of pepper; lastly, add one teaspoonful of vinegar. Put in the meat. Cover the saucepan, and let the meat simmer slowly till quite cooked. This meat will be tender if gently cooked; if the meat boils it will be hard.

COTTAGE PUDDING.—Take one tablespoonful of butter, one cupful of sugar, one cupful of milk, two eggs, one large teaspoonful of baking powder, and one cupful and a half of flour. Beat butter, sugar and yolks of eggs together until light, add the milk and then the flour; beat well. Now beat whites to a stiff froth, and stir them carefully into the pudding, add baking powder and mix well. Pour into a cake pan. Bake three-quarters of an hour; serve hot with lemon sauce. For the lemon sauce use half a tablespoonful of butter, half a cupful of sugar, two cupfuls of hot water, a pinch of cinnamon, and about the same of grated nutmeg, juice of half a lemon and a little rind, and one tablespoonful of flour.

GINGERBREAD NUTS.—These are favorite dainties with little folks. Put one pound of brown sugar in the mixing bowl, add one-quarter pound of butter and a pint of fine molasses. Stir these until well blended; add a tablespoonful of fresh ground ginger, a tablespoonful caraway seeds and half a cupful of candied orange peel cut in tiny pieces. Mix well, add two beaten eggs, then stir in a pint of flour sifted with a teaspoonful of soda. Mix well and add as much more flour as may be necessary to form a firm dough. Break off little bits about half the size of a hen's egg, and then roll into small balls; put a tiny square of candied orange peel on top of each. Place on baking sheets so that they do not touch, and bake in a slow oven for an hour. Candied cherries cut in halves, or bits of soft, crystallized ginger may be used to decorate the tops in place of the orange peel.

STEWED CHICKEN WITH DUMPLINGS.—Divide into pieces at the joints, and put into a stewpan with salt, pepper, a little parsley and thyme. Add one quart water and a little butter, unless the fowl is very fat. Cook until tender. When done, remove the chicken from the pan, and make a gravy, adding as much flour and water as is necessary. Dumplings: Take one quart sifted flour, one teaspoonful of salt, two teaspoonfuls of cream tartar, and one teaspoonful soda. Mix with milk, and form into biscuit shape. Place them in a steamer, and steam twenty minutes. It is best to steam over the kettle in which the chicken is cooking during the last twenty minutes that you boil it. Be careful not to overcook them, or have them done sooner than you wish to serve them.

PEA SOUP.—Cut up two pounds shin of beef and one pound pickled pork into rather small pieces, put them in a large saucepan with four quarts of water, one pint of split peas, which should have been soaked all night in cold water; wash and cut up small two carrots, one turnip, one small head of celery, three or four onions; add these to the rest of the ingredients with a little seasoning. Let the whole boil gently for at least three hours, stirring it well up from the bottom frequently so that the peas may not settle and burn. This can either be served with the pieces of vegetable and meat in it, or may be passed through a sieve, pressing the vegetables with the back of a wooden spoon so that they pulp through into the tureen. Dice of toasted bread, and a dish of dried mint powdered, should be sent to table with the soup.



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THE VETERINARIAN.

Milk Fever and the Schmidt Treatment.

The latest account of this disease and its treatment is published in Bulletin 58 of the Iowa Experiment Station by Dr. John J. Repp, veterinarian. It should be carefully studied by all who are handling dairy cows.

Parturient paralysis, or "milk fever," occurs wherever milk cows are kept. It is more prevalent in dairy districts, because it is the heavy milking strains of cows that are most subject to the disease. As far as I am able to learn, it is quite prevalent in certain sections of our own State, while in other sections it rarely occurs. In the same locality more cases occur in some years than in others. This irregularity of distribution does not appear to throw any light upon the cause of the disease.

CAUSE.—No definite cause can be assigned for this disease. We cannot do more than theorize upon this point. The scope of this article will not permit the discussion of these various theories, therefore it shall be limited to a brief consideration of the theory which more especially concerns the present discussion, namely, that of Veterinarian J. Schmidt of Kolding, Denmark. Schmidt's theory is that parturient paralysis is caused by the evolution in the mammary gland of a poisonous substance through the over-activity of the epithelial cells of this gland excited by the determination to the udder after birth of large quantities of blood which was supplied to the uterus and the fœtus before birth, but which now goes to the udder because of the natural demand for milk secretion. This poisonous substance being carried in the circulation to various parts of the body, brings on the symptoms which characterize the disease. It is well recognized that living cells may, under certain circumstances, produce poisonous substances. Schmidt's theory, therefore, is in accord with an established principle.

GENERATION OF THE DISEASE.—Parturient paralysis, as a rule, occurs in cows which give a heavy flow of milk, and which are in a high state of nutrition. It may develop at any age, but is extremely rare in cows before they have reached adult age and have given birth to several calves. It is also rare in old cows. It occurs, then, in cows which are of middle age and in the full height of their activity as milk producers. The disease attacks the cow after she has given birth to a calf, usually within twenty-four hours thereafter, but in some cases not until a week or even a month after parturition. In a few cases the disease has its inception a short time before parturition. Cows which are stabled and deprived of exercise are said to be more prone to the disease than those which are permitted to exercise at will. There are many exceptions to this statement, although it is the usual teaching. Further observation may show that it is not correct. The report given in this bulletin indicates that in Iowa more cows take this disease while at pasture than in any other circumstance. This doubtless arises from the fact that in Iowa cows are given more freedom than is customary in older dairy States. The disease may arise at any time in the year, but, on account of the fact that springtime is pre-eminently the calving season, most cases originate at this season.

SYMPTOMS.—The disease usually appears within twenty-four to forty-eight hours after parturition. In extreme cases it may not occur until two months or even six months after parturition. It may rarely occur before birth. It usually follows an easy birth. At the onset of the disease the cow manifests some uneasiness; she moves about in a restless manner, stamps, strikes the abdomen with hind legs, perhaps bellows, grinds the teeth and may have spasms of groups of muscles or even a general convulsion. After this period, which may be unnoticed, the symptoms of paralysis come on. The cow shows weakness, staggers and at last falls. As the paralysis advances, she stretches on the ground, lying on her side usually with the neck bent to one side so as to bring the nose into the flank or the costal region. This is the characteristic position of parturient paralysis. If the head is brought into the normal position, it at once returns to the unnatural position in which it was found. The animal is in a state of partial or complete unconsciousness, does not respond to blows or calls and takes no note of her surroundings. The eye is dull and not sensitive to the finger touch, sunken, pupil dilated and the upper lid is drooping; the tongue is paralyzed, saliva runs from mouth, the pharynx and œsophagus have lost the power of motion so that the animal is unable to swallow; the peristalsis of the stomachs and intestines is in abeyance, and as a result digestion is arrested, fermentation sets in and the animal becomes tympanitic; the contents of the rectum and colon are hard and dry and may be covered with mucous or blood, urination is suspended; the os uteri is almost invariably dilated if the disease occurs within a day of parturition; pulse small, often imperceptible, 60 to 120 per minute; temperature usually normal or below normal, maybe as low as 95° F., in some cases maybe as high as 105° F. Such a high temperature probably does not occur in a case of pure parturient paralysis, but only when there is a complication of parturient septicæmia. The extremities are cold. The afterbirth is sometimes retained. There may be accompanying prolapse of the uterus.

COURSE.—Without treatment, and indeed with most kinds of treatment which have been applied in the past, the disease usually runs rapidly to a fatal issue. It lasts two to three days, and in some cases longer, the condition gradually becoming more and more aggravated. Death results from sudden failure of the heart or brain and is often preceded by profuse diarrhœa. In milder cases the cow may linger as long as two to four weeks and then die of pneumonia, which results from the inhalation, or introduction through attempts at medication, of foreign substances into the lungs during the period of paralysis of the pharynx and œsophagus. If recovery occurs, the animal is entirely well in two to five days. In rare cases, paralysis of the hind parts may persist for a long while.

TREATMENT.—This may be considered under two distinct subdivisions, viz., preventive treatment and curative treatment. (a) Preventive Treatment —By considering what has been said under the head of "generation of the disease," one can easily infer what measures should be adopted to prevent the disease. Cows in the later stage of gestation should be fed moderately, grain especially being given sparingly or entirely withheld; the animals should be given an opportunity to take plenty of exercise; the bowels should be kept in good condition by the administration of such salines as magnesium sulphate, sodium chloride and sodium bicarbonate. The afterbirth should be removed soon after parturition and several uterine douches administered.

(b) Curative Treatment — Schmidt does not claim that his method of treatment disposes bodily of the morbid condition, but that it does measurably assist nature in her efforts to restore the animal to the normal physiological state. It is well known that, after the beginning of the attack, the animal, if left to herself, rapidly grows worse until the crisis of the disease is reached, at which time death occurs or convalescence begins, usually the former. It has been observed, however, that if the treatment is applied within a few hours after the inception of the disease, its progress is modified in such a way that convalescence at once begins, as a rule, and the animal hastily recovers her health, usually within twelve hours, although in extreme cases it may be as late as forty-eight hours. Following is an outline of the plan of treatment of parturient paralysis suggested by Schmidt: The operator should disinfect his hands and the udder and teats of the cow by washing with a 5% solution of carbolic acid or creolin, or a 1½% solution of lysol or trikresol. The apparatus needed for the treatment consists in a small glass funnel, a rubber hose three feet long and one-eighth inch in caliber, into which the funnel fits, and an ordinary milking tube over which the rubber hose fits. This apparatus should be sterilized immediately before it is used by boiling or soaking in such a solution as recommended for washing the udder. Dissolve from two to two and one-half drams of potassium iodide, the size of the dose depending upon the size of the cow and the character of the attack, in about one quart of clean water previously boiled to sterilize it and allow the solution to cool to a little above body temperature, or 40° C., or 104° F. The temperature may be determined with the clinical thermometer. Withdraw all the colostrum or milk from the udder. Then insert the milking tube with hose and funnel attached into one of the teats, elevate the funnel about two feet above the teat and slowly pour in one-fourth of the solution, allowing the funnel and hose to become empty several times during the process in order to permit the entrance of a liberal quantity of air. Repeat this infusion with the other three-quarters of the udder. After all is introduced, knead the udder carefully so as to cause the solution to permeate the ducts and acini as much as possible. As the condition of the cow is usually such as to indicate additional treatment, the veterinarian should not be content with simply the infusion of the potassium iodide solution, but should resort to other measures which promise assistance. As the cow is usually unable to urinate, the bladder will be found filled with urine. This should be removed with the catheter and its removal accomplished at intervals until the recovery of the cow renders this procedure no longer needful.

It may be advisable that catharsis be brought about. As the cow is usually unable to swallow, it is dangerous to attempt to give medicines by the mouth. This may be done if assurance is obtained that the cow can swallow. Some have given medicines successfully through a probang inserted into the stomach. This plan is feasible. Schmidt says that he usually resorted to an aloe powder. If this is done, one ounce to one and one-half ounces of aloes may be given. It would seem preferable to give the aloes in a bolus, capsule or drench. Some have given linseed oil or epsom salt. If the animal can not swallow, and a probang is not at hand, one may administer one and one-half to two grains of physostigmine salicylate subcutaneously, repeating the dose in about three hours if purgation is not produced. Rectal injections should be given at short intervals in order to get rid of the accumulation of hard, dry feces in the rectum. These injections may be of linseed oil, cottonseed oil or warm soap solution. Schmidt recommends also enemata of sodium chloride solution. Meanwhile the cow should be kept propped up on the sternum by means of bags of straw or pieces of wood. If the temperature is below normal, as it usually is, the cow should be thickly clothed with blankets and straw heaped up about her. Schmidt used powdered digitalis given by the mouth when the heart was rapid and weak. It would seem much better in every way to give the tincture of digitalis subcutaneously. He has also resorted to subcutaneous injections of camphor and caffeine. This is good treatment. If the cow does not show marked improvement within eight hours, the potassium iodide infusion may be repeated. Schmidt has found that as high as six drams may be given into the udder without harm to the cow. Schmidt in his first report, made in 1898, recorded fifty cases treated for parturient paralysis by this method, with but two deaths from the disease. There were, however, only forty-six recoveries, as two cows were slaughtered for beef during the first day of convalescence. A short time later a report was made by Jensen showing that in Denmark up to that time sixty-five veterinarians of that country had treated 412 cases by the Schmidt method, 90% of which recovered. These results seemed to indicate that this was the treatment par excellence for this disease. It still remained to secure the introduction of this treatment into the United States and to determine what results could be obtained by our veterinarians through its application. With a view to aiding in the accomplishment of this object, in September, 1899, I addressed a circular letter to each of the 150 graduate veterinarians in Iowa requesting their co-operation in the work of this research by applying the treatment in their practice and reporting their results to me. Ninety of these replied, signifying their willingness to use the treatment.

In November, 1900, a letter was issued to each of these veterinarians requesting that the reports they had collected be sent in. Up to this time I have received replies from thirty-three veterinarians. In all 166 cases were reported; of these, 119 resulted in recovery, while 47 were fatal. Of the fatal cases, in eight of the cows death may be traced to some complication such as prolapse of the uterus, foreign-body pneumonia, etc. In these cases the Schmidt treatment can not be said to have failed, for it is not in any way intended that it shall be able to overcome such accidental conditions. If the cow has recovered from her condition of paralysis as a result of the Schmidt treatment far enough to be out of danger from that source and to promise recovery, but later falls victim to some complication that is in no measure a part of parturient paralysis, but only a result of that disease, it may with justice be said that the Schmidt treatment was a success so far as the malady against which it was directed is concerned. Looking at the reports from this generous point of view, in 127 cases out of 166, or 76.51%, the Schmidt treatment was successful so far as the parturient paralysis was concerned.

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THE APIARY.

California Bee Notes.

Prof. A. J. Cook, Claremont, Los Angeles county, writes to the American Bee Journal about foul brood of a new type in the San Joaquin valley, as follows:

This has not just the same odor as the usual foul brood, and as it is pulled out of the cell it does not fly back with quite the spring of the ordinary foul brood. Yet it appears so much like the genuine that I believe it is the same with these differences. It is foul brood, but not the typical.

We now have a good foul brood inspector in Los Angeles county. He is proceeding in just the right way to eradicate this evil, which is not very uncommon in our aviaries, though I doubt if it is so fatal as in the East. Some urge him to burn all. I think he is wiser in treating the disease. In case only one or two hives show the malady, he burns all. If only diseased cells are found in one or two combs, and a few at that, he burns these combs, watches the colonies closely and hopes for no more trouble. In case many colonies are affected he uses the McEvoy method—shakes onto starters, and in four days onto full sheets of foundation. He is very cautious that none of the honey in the old hive, or that stored in starters, is eaten by bees. He further does a good work by teaching all interested the nature of the disease, the modes of distribution, the necessary caution in working with the bees, that none of the honey shall be taken by any bees.

It is wisest, of course, to work only when the bees are at work, and some are so careful as to work only at the evening time. It is safest to work under a tent. Wise caution alone will prevent scattering the honey and the disease. Let all remember that they can not be too careful.

FATAL RESULTS FROM BEE STINGS.—A few days ago two horses were stung to death by bees in Yolo county, near Sacramento, Cal. The driver was also seriously stung, but not fatally. He was driving a four-horse team and ran onto a hive of bees. The results were as given above. This suggests that in such cases the horses may be taken to a barn, if possible, as the bees will not generally follow into an enclosure. Covering the horses with blankets wet in cold water will stop the stinging and subdue the fever, and will often prove the readiest means to prevent fatal results.

In case a person is everely stung, washing in strong soda water and covering with cloths kept wet in cold water will do most to allay fever and afford relief.

Intoxicated by Beans.

Among the peasants of southern Italy, Sicily and Sardinia a curious malady has been noticed by physicians, which is caused by eating beans. One of the most remarkable effects of the malady is a species of intoxication resembling that produced by alcoholic drink. In some cases persons predisposed to the malady are seized with the symptoms of intoxication if they pass a field where the bean plant is in flower, the odor alone sufficing to affect them.

This statement is commended to those who may reach home a little out of condition. It may be especially serviceable in the bean counties.

"California Fruits" in the Southern Hemisphere.

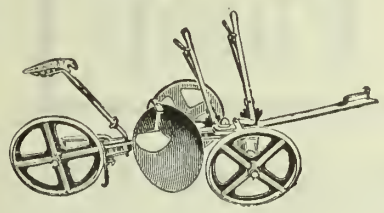
Our book, "California Fruits and How to Grow Them," seems to be exerting quite an influence at the antipodes. A leading fruit grower in South Africa writes:

I have owned your books since their publication, and have had them introduced here to the general benefit. I may say, incidentally, that they have also furnished information for quite a small army of plagiarists and pamphleteers.

In the new catalogue of D. Hay & Son, Montpellier Nurseries, Auckland, New Zealand, we find the following:

We have used "California Fruits" and acted upon the advice given therein for some years, and find it well adapted to our requirements. Fruit growers in New Zealand are sadly in need of a practical work, and until we are sufficiently advanced to possess a guide compiled from New Zealand experience "California Fruits" will supply tho want.

Rotary Disc Plows.



All tho plow manufacturers have been making experiments of this style of plow, and this is evidence that they see sufficient morit in the principle of the disc plow to try to dotermine if they can make the plow so that it will do good work under all conditions. Tho Benicia Agricultural Works of Benicia, Cal., evidently have struck upon the right model, for they have placed orders to put up over 1000 of these plows for noxt season. From all accounts, it will be a surprise to other disc plow manufacturers, and many applications for agencies are already being made to the selling agents, Baker & Hamilton, San Francisco, Sacramento, Los Angeles. *

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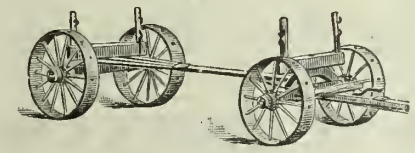

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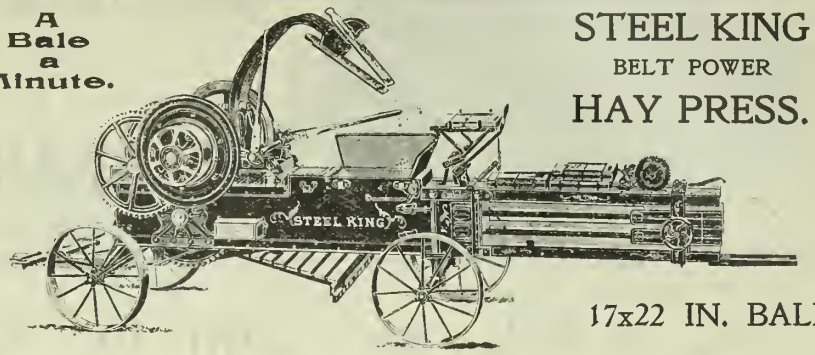

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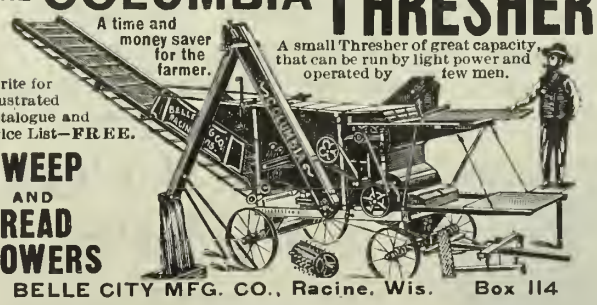

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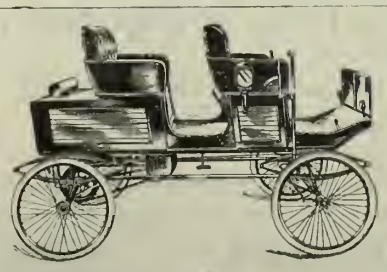

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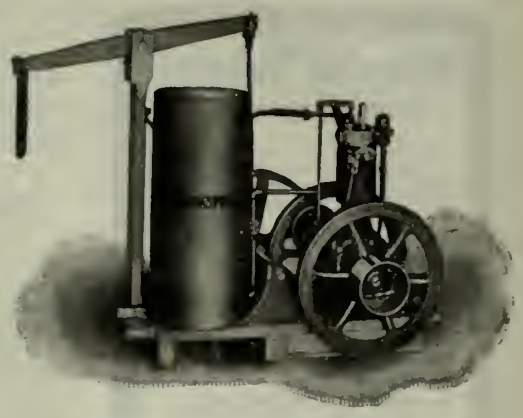

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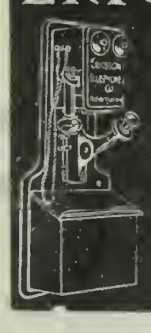

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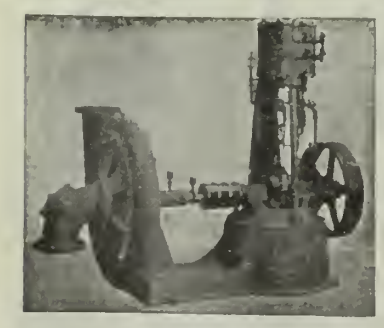

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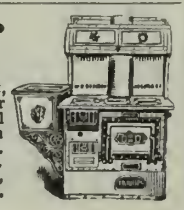

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California Fruit at the Pan-American Exposition.

The official circular of the Exposition makes the following reference to a part of the California display: The Los Angeles county exhibit, showing part of California's products at the Pan-American Exposition, was provided under the auspices of one thousand business men of southern California comprising the Los Angeles Chamber of Commerce. This exhibit consists of citrus fruits; oranges, lemons, etc., tangerines and other fruit supplied by the Southern California Fruit Exchange, while the olive oils, canned goods and crystallized fruits are supplied by the Board of Manufacture.

Nuts of various kinds; English walnuts, almonds, etc., are supplied by the association of growers formed for the purpose of disposing of their crop. Fruits in glass are represented by samples of every product raised in the State; they consist of grapes, some bunches weighing as much as twelve pounds and measuring one foot in length. Sweet potatoes, very white, that measure sixteen inches in length, that look like selected samples of overgrown carrots, associate on equal terms with delicious peaches and oranges measuring from seven to nine inches in circumference, and pears and quinces weighing two and one-half pounds each. Loquots, kumquots, Monstrea deliciosa, and pawpaws are among the novelties in the fruit line that take the attention of the visitor as he passes through the exhibit.

Dried fruits in artistically arranged packages, showing another method of preserving immense peaches, pears, and clusters of raisins. In this line are exhibited two figures—a man and a woman—made of all the various kinds of fruits that are ordinarily evaporated, representative of the Mexican native of California a hundred years ago. The exhibits are installed back of a facade made expressly to represent the old California adobe mission construction. Archways are lined with oranges and supported on pillars ornamented with fan palms, stems and California bamboo. Mounted on one of these arches is an elephant made entirely of English walnuts. This important industry of growing English walnuts was built up in the short space of fourteen years. The growers in this line have always kept the organization in their own hands with the result that the fruit is sold long before it is ripe.

The oranges used in the decorative features are replaced every day with fresh ones brought from the coast, as improved methods of propagation and cultivation now render the crop continuous throughout the year. The total crop of oranges of southern California last year was about 25,000 cars, of which 17,000 cars only were shipped; leaving 8,000 cars of fruit to spoil because of insufficient transportation facilities. There are on an average about 54,300 oranges to the car, so what there should be sufficient to supply one dozen and one-half of oranges for each man, woman and child in the United States; if you failed to get your quota find fault with the railway companies.

While this exhibit is supposed to represent the horticultural products of the country, the displays of the fish products have not been neglected, as mounted specimens are exhibited showing fish that have been caught on the western coast weighing from 10 to 450 pounds each. These are from the island of Santa Catalina, that is situated fifty miles from Los Angeles.

Textile Plants in Salvador.

Consul Jenkens sends from San Salvador, May 16, 1901, translation of a recent law offering a bounty of 1 peso (about 45 cents) per 1,000 to any cultivator of 5,000 to 10,000 plants of maguey or other textile plant; 0.5 peso per 1,000 to any cultivator of 10,000 to 60,000 plants; and 0.25 peso per 1,000 for 60,000 and upward. The proprietors of the plantations shall be exempt from all military charges and services. Exporters of more than 5,000 pounds of maguey fiber shall enjoy exemption from all duties and taxes, and all tools and machinery for the cultivation and improvement of maguey shall be free of import duties.

Olive Crop in Southern Europe.

Consul Van Buren reports from Nice, May 7, 1901: A local newspaper calls the attention of proprietors of olive groves in that district to the diminishing production in Italy, due to the mild winters, the dry spring seasons, and the consequent ravages of the olive fly. It urges the owners of olive plantations to adopt means for their improvement, claiming that better markets will be found on account of the decreased competition from Italy. It omits to state, however, that very much the same condition of things exists at Nice, entire districts being ruined by the black blight or noir, as it is called, while the ravages of the olive fly are an annual occurrence.

$100 Reward, $100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

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SHEEP.

R. H. CRANE, Santa Rosa, Cal. Breeder and importer of South Down Sheep.

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POULTRY supplies of all kinds. Send for my new price list and booklet, **"HOW TO FEED FOWLS FOR PROFIT."** **CROLEY,** 508 Sacramento St., San Francisco, Cal.

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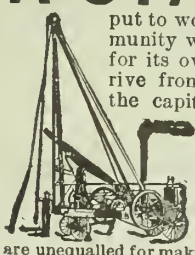

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It is essential for the well-being of all animals that they receive a suitable addition to the ration, not only to restore them if out of condition, but to keep them in the most profitable state of health. This is obtained by **Lincoln Feeding Compound** which is a great improvement upon and desirable substitute for so-called "Stock Foods." Write for literature regarding this cheap and economical preparation.

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THE DEMAND FOR SWINE
the past year has been very great and we have been obliged to decline to quote prices to a good many inquirers as we had nothing to ship. We have one Berkshire boar farrowed Dec. 9, 1900, and also two Poland-China sows farrowed June 25, 1900, that we can sell and will describe them to anyone wishing such animals.
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A virus for destroying ground squirrels or "gophers."
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California Fruits.
NEW EDITION (3rd). LARGELY REWRITTEN.
By PROF. E. J. WICKSON.

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330 Market Street, San Francisco, Cal.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 26, 1901.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	July.	Sept.
Wednesday	69⅝@70	68⅝@69
Thursday	69⅞@69	68¼@68⅞
Friday	68⅞@67	68 @66⅞
Saturday	66 @67	66⅛@67
Monday	67 @66⅛	66⅞@66¼
Tuesday	65⅝@66⅛	66 @66½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday	5s 8½d	5s 8¼d
Thursday	5s 8¼d	5s 8¼d
Friday	5s 7⅜d	5s 7⅜d
Saturday	5s 6½d	5s 6¼d
Monday	5s 6¾d	5s 6½d
Tuesday	5s 5¾d	5s 5¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec.	May.
Thursday	1 01⅝@1 01¾	——@——
Friday	1 01¼@1 00⅝	——@——
Saturday	99⅞@1 00⅛	——@——
Monday	1 00⅛@1 00⅝	——@——
Tuesday	99⅞@1 00⅛	——@——
Wednesday	1 00⅛@1 01⅛	——@——

WHEAT.

Instead of developing strength, on account of the wheat crop in a considerable portion of Europe being poor, the market has gone from bad to worse since last review. Some of the late advices from England and France have indicated anything but desirable weather for the growing grain in those countries. Germany's crop promises to fall far below the average, and it is said will necessitate that country importing this season 2,500,000 to 3,000,000 tons of wheat, calculating a ton 2000 pounds, while during the cereal year now ended she has required from outside sources less than one-half the above quantity, or not to exceed 1,125,000 tons. With such an increase in the prospective demand, it is surprising that wheat values should decline from levels which were already too low for the majority of producers to make anything like a good showing on the right side of their ledger accounts. The lack of strength displayed abroad is thus accounted for. It is claimed that Italy and Spain will be this season independent of foreign markets, while the past season they required about 1,000,000 tons wheat from other countries. South Russia had a crop failure last year, falling about 500,000 tons below requirements, while this season it is claimed this district will have a surplus. The visible supply of the United States east of the Rockies decreased the past week 2,236,000 bushels, and is now given at 32,903,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1901, delivery, 99⅞@$1.01¾.

May, 1902, delivery, —@—c.

Wednesday, at regular noon session of Call Board, December, 1901, wheat sold at $1.00½@1.01⅛; May, 1902, $—@—.

California Milling, old	$1 00	@1 05
Cal. No. 1 shipping, alongside	95	@ 97½
Oregon Valley	95	@1 00
Washington Blue Stem	97½@1 02½	
Washington Club	95	@ 97½
Off qualities wheat	92½@	95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-1900.	1900-01.
Liv. quotations	6s6d@6s2½d	5s10d@5s10½d
Freight rates	40@—s	36¼@38s
Local market	$1 02½@1 05	95 @97½

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Tendency on flour has been to lower values, although no quotable declines have been announced. Not much flour is now being turned out by the mills on this coast, and seldom is at this time of year, but there is more than enough on hand for current needs.

Superfine, lower grades	$2 25	@2 40
Superfine, good to choice	2 50	@2 75
Country grades, extras	3 00	@3 25
Choice and extra choice	3 25	@3 50
Fancy brands, jobbing	3 50	@3 65
Oregon, Bakers' extra	2 75	@3 15
Washington, Bakers' extra	2 75	@3 25

BARLEY.

The market shows no quotable improvement as regards prices obtainable, but there is a change for the better in the matter of demand. Shippers have commenced buying on foreign account, no doubt wisely concluding that the market could not well be any more favorable to them than at present. While no special hardening of rates is looked for in the near future, it is pretty clearly established that values have touched bedrock. It is likely that at some interior points, especially for very desirable lots, slightly better figures, relatively, are being realized than are quotable here. Two cargoes of this cereal, aggregating 5250 tons, representing a value of $93,000, were sent afloat the past week for the United Kingdom.

Feed, No. 1 to choice	70	@ 72½
Feed, fair to good	67½@	70
Brewing, No. 1 to choice	77½@	82½
Chevalier, No. 1 to choice	—@—	
Chevalier, No. 2	—@—	
Chevalier, poor	—@—	

OATS.

Changes in values have been less pronounced than during preceding week, but the market has, nevertheless, inclined against the selling interest. No. 1 Red oats, deliverable at seller's option any time within the year, were offered at 97½c., same operator bidding 95c. on same option. In the spot market choice new Reds were difficult to place at $1.15, and only fancy were quotable at a higher figure.

White Oats, fancy feed	1 40	@1 45
White, good to choice	1 32½@1 37½	
White, poor to fair	1 20	@1 30
Gray, common to choice	1 20	@1 40
Milling	1 42½@1 47½	
Surprise, good to choice	1 45	@1 50
Black Russian	1 05	@1 12½
Red	1 05	@1 12½

CORN.

Reduced offerings of Large Yellow have caused a steadier market for this variety. Export demand has absorbed nearly all the Large White on market. Small Yellow is being as firmly held as for some time past.

Large White, good to choice	1 35	@1 40
Large Yellow	1 27½@1 32½	
Small Yellow	1 55	@1 60
Eastern, in bulk (carload lots)	1 22½@——	

RYE.

Very little doing in this cereal and no improvement in price.

Good to choice, new	75	@ 80

BUCKWHEAT.

No transfers reported. While there is nothing to warrant changing quotations, values are not very clearly defined.

Good to choice	1 75	@2 00

BEANS.

The bean market showed much the same quiet condition as previously reported, with no likelihood of any great activity being experienced during the balance of the current season. Offerings of most kinds are too light to admit of any great amount of business. Lady Washingtons or large Whites and Pinks constitute a large proportion of present supplies. Values are being as a rule well maintained at the quoted range, it being the exception where any undue pressure to realize is exerted.

Pea, fair to good, 100 lbs	4 75	@5 00
Small White, good to choice	4 50	@4 90
Lady Washington	3 75	@4 00
Butter	—@—	
Pinks	1 30	@1 65
Bayos, good to choice	2 40	@2 60
Reds	3 00	@3 25
Red Kidney	4 25	@4 50
Limas, good to choice	6 25	@6 40
Black-eye Beans	2 75	@3 00
Horse Beans	1 00	@1 25
Garbanzos, large	2 00	@2 25
Garbanzos, small	1 25	@1 75

DRIED PEAS.

Demand and offerings are both light. It is not probable that the market will rule materially different during the next few months, or until new crop begins to come forward.

Green Peas, California	2 65	@2 80
Niles Peas	1 60	@1 75

WOOL.

Some wools have changed hands in this center since last review, no very great quantities, but enough to show that there was a change for the better. Considerable purchasing was done in the interior, and in some instances at relatively better figures than were current here. Prices show no quotable improvement, but there are dealers who are willing to purchase at current values, which was not the case a few weeks ago.

SPRING.

Humboldt and Mendocino	14	@15
Northern, free	12	@13
Northern, defective	10	@11
Middle Counties, free	10	@11
Middle Counties, defective	9	@10
Southern, 12 mos	8	@ 9
Southern, free, 7 mos	7	@10
Southern, defective, 7 mos	7	@ 8
Oregon Valley, fine	14	@15
Oregon Valley, coarse to medium	12	@13
Eastern Oregon, choice	11	@13
Eastern Oregon, fair to good	9	@10
Nevada, as to condition	10	@12

HOPS.

Aside from small quantities in the hands of jobbers, the market is practically bare of hops. In a small way 16@20c. is being realized for fair to choice of 1900 crop. There is nothing doing, so far as reported, in the way of contracting for new hops to arrive, growers and dealers being apart in their views of values.

Good to choice 1900 crop	15	@20

HAY AND STRAW.

The market for hay has been running along in much the same groove as during preceding week, inclining in favor of buyers, especially for other than most select qualities, with offerings largely of the cheaper grades. Straw ruled fairly steady, with only moderate offerings.

NEW CROP.

Wheat, good to choice	8 00	@10 00
Wheat and Oat	7 50	@ 9 50
Oat	6 50	@ 8 00
Oat, stained	4 00	@ 5 50
Barley and Oat	6 50	@ 8 00
Alfalfa	6 00	@ 8 00
Clover	5 00	@ 6 00

OLD CROP.

Wheat	8 00	@12 50
Wheat and Oat	8 00	@12 00
Oat	7 00	@ 9 50
Barley	6 00	@ 8 00
Stock	5 00	@ 7 00
Compressed	8 00	@12 00
Straw, ₱ bale	40	@ 47½

MILLSTUFFS.

Market has shown steadiness for mill offai, with no heavy offerings of any description. Local mills are not turning out much at present, and arrivals from outside districts are of light volume. Market for Rolled Barley and Milled Corn is not firm at the quotations.

Bran, ₱ ton	17 00	@18 00
Middlings	18 00	@21 00
Shorts, Oregon	17 00	@18 00
Barley, Rolled	16 00	@17 00
Cornmeal	——	@27 00
Cracked Corn	——	@28 00

SEEDS.

There is little doing in this line, market being very lightly stocked. Business transacted is mainly of a small jobbing character and at generally unchanged figures, quotable values remaining practically as last noted.

	Per ctl.
Mustard, Trieste	——@——
Mustard, Yellow	——@——
Flax	2 50@3 00
Alfalfa, Utah	——@——
Alfalfa, California	——@——
	Per lb.
Canary	3¼@ 3¾
Rape	2 @ 2½
Hemp	3 @ 3½

BAGS AND BAGGING.

Grain Bags are moving freely into the interior, as is natural, with harvesting in full blast. Prices have been maintained at same figures last quoted. Some holders are predicting that Calcuttas will touch 8c. before the close of the season. Predictions have been often made in the bag trade, however, which have not been fulfilled. As compared with other values generally, bags are now commanding high figures.

Calcutta Grain Bags, buyer June-July	7¾@—
Calcutta Grain Bags, spot	7¾@—
San Francisco Grain Bags, 22x36, spot	7½@ 7⅝
State Prison Bags in lots of 2000, ₱ 100	—@—
Wool Sacks, 4 lbs	32½@35
Wool Sacks, 3½ lbs	30 @32½
Fleece Twine	7½@—
Gunnies	—@12½
Bean Bags	4⅞@ 5¼
Fruit Sacks, cotton	6½@ 7¼

HIDES, PELTS AND TALLOW.

Hides are meeting with tolerably prompt custom, there being a good demand, both for shipment and on local account. Market is firm at prevailing rates. Values for pelts remain quotably unchanged, but movement is not very active. Tallow is bringing as a rule full current figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs	10 @—	8½@—
Medium Steers, 48 to 56 lbs	9 @—	7½@—
Light Steers, under 48 lbs	8 @ 8½	7 @—
Heavy Cow Hides, over 50 lbs	8½@ 9	7 @7½
Light Cow Hides, under 50 lbs	8 @ 8½	7 @—
Wet Salted Kip	9 @—	8 @—
Wet Salted Veal	9 @—	8 @—
Wet Salted Calf	10 @—	9 @—
Dry Hides	15½@16	13½@—
Dry Kip and Veal, 11 to 16 lbs	15 @—	12 @—
Dry Calf, under 4 lbs	16 @—	14 @—
Salted Horse Hides, large	2 50	@ —
Salted Horse Hides medium	2 00	@ —
Salted Horse Hides, small	1 00	@ —
Dry Horse Hides, large	1 75	@ —
Dry Horse Hides, small	1 00	@1 25
Dry Colts' Hides	50	@ —
Pelts, long wool, ₱ skin	75	@1 00
Pelts, medium, ₱ skin	50	@ 75
Pelts, short wool, ₱ skin	30	@ 40
Pelts, shearling, ₱ skin	10	@ 25
Deer Skins, best summer	35	@ —
Deer Skins, good medium	—	@ 30
Deer Skins, thin winter	—	@ 10
Elk Hides	10	@ 12
Tallow, good quality	4¼	@ 4½
Tallow, No. 2	3½	@ 3¾
Goat Skins, perfect	30	@ 37½
Goat Skins, damaged	10	@ 20
Kid Skins	5	@ 10

HONEY.

Not much coming forward, the bids of dealers being on too low a plane to draw forth liberal consignments. To purchase freely, higher figures than quoted would have to be paid. On the other hand, if selling pressure were exerted, in all probability prices below named would have to be shaded in favor of buyers.

Extracted, White Liquid	5½@	6½
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3½@	4
White Comb, 1 lb frames	11½@	12½
Amber Comb	9	@10
Dark Comb	6	@ 8

BEESWAX.

No new developments to record. Spot stocks and offerings are of much the same light volume as for months past.

Good to choice, light, ₱ lb	26	@28
Dark	24	@25

LIVE STOCK AND MEATS.

Beef is commanding nearly as good figures as last quoted, but the movement is not active. Mutton is in ample stock for current needs, market being easy in tone but not quotably lower. Lamb and Veal brought in the main very steady rates, with no heavy offerings of either sort. Hogs were in only moderate receipt, few arriving from the East, and market was firm at the higher rates quoted.

Beef, first quality, dressed, net ₱ lb	7	@—
Beef, second quality	6½@	7
Beef, third quality	6	@—
Mutton—ewes, 6½@7½c; wethers	7	@ 8
Hogs, hard grain fed, medium	6¼@	6⅜
Hogs, small, fat	6¼@	6⅜
Hogs, large, hard	5⅞@	6
Hogs, feeders	—@—	
Hogs, country dressed	7½@	7¾
Veal, small, ₱ lb	8	@ 9½
Veal, large, ₱ lb	7	@ 8
Lamb, spring, ₱ lb	8½@	9

POULTRY.

While receipts of both domestic and Eastern were less excessive than for a week or two preceding, the market showed no radical improvement. Some of the principal retailers have recently purchased considerable quantities of Eastern poultry at less than cost of laying down the same in this center. Much of this poultry has been killed and stored in ice house, awaiting a more favorable market. Big young chickens continue in light receipt. Pigeons have been ruling slightly firmer.

Turkeys, live hens, ₱ lb	9	@ 10
Turkeys, live gobblers, ₱ lb	9	@ 10
Hens, California, ₱ dozen	3 50	@4 00
Roosters, old	3 00	@3 50
Roosters, young (full-grown)	6 00	@7 00
Fryers	3 50	@4 50
Broilers, large	3 00	@3 50
Broilers, small	1 75	@2 50
Ducks, old, ₱ dozen	3 00	@3 50
Ducks, young, ₱ dozen	4 00	@4 50
Geese, ₱ pair	1 00	@1 25
Goslings, ₱ pair	1 00	@1 25
Pigeons, old, ₱ dozen	1 50	@1 75
Pigeons, young	1 50	@1 75

BUTTER.

Dealers are not heavily burdened with strictly choice to select creamery or dairy butter, and for this description the market is moderately firm at prevailing values. A few favorite brands of superior merit command above quotable rates. Of the more common grades there is a superabundance, and, on the latter, concessions to buyers are the rule rather than the exception.

Creamery, extras, ₱ lb	18	@18½
Creamery, firsts	17	@17½
Creamery, seconds	—	@—
Dairy, select	17	@17½
Dairy, firsts	16½@	17
Dairy, seconds	14	@15
Dairy, soft and weedy	—	@—
Mixed store	12½@	13½
Creamery in tubs	17	@19
Pickled Roll	—	@—
Firkin, California, choice to select	16	@17
Firkin, common to fair	14	@15

CHEESE.

Supplies of domestic product are not of heavy volume. There is a very fair demand at current values, and market presents a healthy tone. New Eastern cheese, cheddars and twins, are selling in a small way within range of 14@15c.

California, fancy flat, new	8	@ 8½
California, good to choice	7¾@	8
California, fair to good	7½@	7¾
California Cheddar	—@—	
California, "Young Americas"	9	@ 9½

EGGS.

A weak market has been experienced, with an excess of offerings of both domestic and Eastern. Not many eggs are being consumed at present, and the demand is likely to prove light for a month or six weeks to come. Prices have averaged lower than preceding week, and at the re-

duced rates the supply has proven more than ample for immediate needs.

California, select, large, white and fresh.	17½@18
California, select, irregular color & size.	15½@16½
California, good to choice store	13 @14½
Eastern, good to choice	14 @16

VEGETABLES.

Most kinds in season were in very fair receipt, causing the market as a whole to be more favorable to the buying and consuming than to the producing and selling interests. Changes in quotations, while mainly to easier figures, were not very numerous or pronounced. Onions were in more than sufficient supply for the immediate requirements of the trade, although inquiry was very fair on shipping account as well as for local use.

Asparagus, ℔ box	50 @1 50
Beans, String, ℔ lb	1 @ 2½
Beans, Wax, ℔ lb	1½@ 3
Cabbage, choice garden, ℔ 100 lbs	50 @ 60
Cauliflower, ℔ dozen	50 @ —
Corn, Green, ℔ sack	75 @1 25
Corn, Green, Alameda, ℔ large crate	1 50 @2 00
Cucumbers, ℔ small box	35 @ 65
Cucumbers, Bay, ℔ large box	1 00 @1 50
Egg Plant, ℔ lb	— @ —
Garlic, ℔ lb	3 @ 3½
Onions, Yellow Danver, ℔ cental	85 @1 00
Onions, New Cal. Red, ℔ cental	35 @ 50
Peas, Sweet garden, ℔ lb	2 @ 2½
Peas, good to choice, ℔ sack	1 00 @1 50
Peppers, Green Chile, ℔ lb	20 @ 25
Rhubarb, ℔ box	35 @ 50
Rhubarb, Mammoth, ℔ box	60 @ 75
Squash Summer, ℔ small box	20 @ 35
Summer Squash, Bay, ℔ large box	50 @ 75
Tomatoes, River, ℔ large box	2 00 @2 25
Tomatoes, ℔ small box	65 @1 00

POTATOES.

There was a decided weakening in values for new potatoes, immediately following issue of last report, under increased offerings, but there has since been a recovery, with market during the past few days in nearly as good shape for sellers as a week ago. Old potatoes are nearly out of stock, and are meeting with very little positive inquiry, as is to be expected at this late date.

Burbanks, Petaluma-Tomales, ℔ ctl.	1 00 @1 30
Burbanks, Oregon, ℔ cental	1 00 @1 60
New Potatoes, in boxes, ℔ cental	1 25 @1 80
New Mission Garnet Chile, in sacks.	1 25 @1 50
New Early Rose, ℔ cental	1 15 @1 35

The Fruit Market.

FRESH FRUITS.

Apricots are arriving rather freely in bulk, as well as in small boxes. Prices are at a wide range, owing to great difference in quality of offerings. Some very scrubby are going as low as $10 per ton, while there are some very select for which $30 per ton is readily realized. Most sales of choice are within range of $20 and $25 per ton. Peaches of early varieties, mainly from Sacramento river district, are arriving freely and are selling at generally low figures, the quotable range remaining about the same as preceding week. Plums now in season are making a good showing as to quantity, but there are many which are either too small or, if large, are more or less cracked, so as not to be suitable for shipment to distant points. For strictly choice Simonis and fine Tragedy Prunes the market was moderately firm. Cherries were in light receipt and demand for them not very brisk. Figs arrived more freely and were lower. Grapes were offered at easier rates than last quoted. Nutmeg Melons and Watermelons were in increased supply and cheaper. Berries of most kinds were in liberal stock, and considerable quantities went to canners at minimum prices.

Apples, Red Astrachan, ℔ 50-lb. box.	40@ 1 00
Apples, green, ℔ small box	15@ 30
Apricots, Royal, ℔ box	25@ 60
Apricots, fair to fancy, ℔ ton	15 00@30 00
Blackberries, ℔ chest	3 00@ 4 50
Cherries, Black, ℔ box	40@ 85
Cherries, Royal Anne, ℔ box	50@ 85
Cherries, Royal Anne, ℔ lb	5@ 8
Cherries, Black, ℔ lb	5@ 8
Currants, ℔ chest	3 00@ 5 00
Figs, 1-layer box, 30@50c; 2-layer	75@ 1 00
Gooseberries, common, ℔ lb	1½@ 2½
Grapes, Arizona, Seedless, ℔ crate	1 50@ 1 75
Logan Berries, in baskets, ℔ chest	4 00@ 6 00
Nutmeg Melons, Arizona, ℔ crate	2 00@ 3 00
Peaches, ℔ box	25@ 50
Pears, Dearborn Seedl'g, ℔ small box	50@ 60
Pears, River Bartletts, ℔ 40-lb. box	1 40@ —
Plums, Simoni, ℔ box	25@ 60
Plums, Clyman, ℔ box	20@ 40
Raspberries, ℔ chest	3 50@ 6 00
Strawberries, Longworth, ℔ chest	3 50@ 6 00
Strawberries, Large, ℔ chest	3 50@ 5 00
Watermelons, Arizona, ℔ doz	2 00@ 3 00

DRIED FRUITS.

Business in the market for cured and evaporated fruits is not active. Offerings of deciduous fruits of last year's curing, aside from Prunes, are not of heavy volume. Apples, Pears and Figs all make a light showing at present, and there are very few Apricots other than new crop now presented for sale. There are moderate quantities of Peaches and Plums still in stock, but not many of choice to select quality. New Apricots are in fair request within range of 7½@8½c. for choice to select Royals in sacks, in carload lots at primary points, extreme figures being for early July deliveries. That there will be a demand for all of this season's Apricots at comparatively good figures seems tolerably certain. Pears give promise of meeting with a very satisfactory market, especially high grade stock. As to Apples, Peaches, Plums and Figs, the outlook is not so certain. Much will depend on the quantity cured. While the demand will not be unlimited, it will likely be possible to place moderate quantities at fairly remunerative figures. The Prune market is quotably unchanged, with only a moderate movement on both foreign and domestic account, but there is some improvement in the tone, with prospects for firmer rather than easier rates a little later on.

EVAPORATED OR BLEACHED.

Apricots, Royal, prime	6½@ 7
Apricots, Royal, choice, in sacks, ℔ lb	7½@ 8
Apricots, Moorpark	9 @11
Apples, in 50-lb boxes, rings, pressed, fancy	5½@—
Apples, 50-lb boxes, rings, pressed, good to choice	3½@ 4½
Figs, White, fancy pressed	— @—
Nectarines, ℔ lb	4 @ 6
Peaches, unpeeled, fancy	5¼@ 5¾
Peaches, unpeeled, choice	3½@ 4
Peaches, peeled, in boxes	11 @13
Pears, unpeeled Bartletts, halved, fancy.	5½@ 6½
Pears, halved, unpeeled Bartletts	3½@ 4½
Pears, quartered, unpeeled Bartletts	3½@ 4½
Plums, Black, pitted	3½@ 4½
Plums, White and Red	4¾@ 5½
Prunes, Silver	4½@ 6

COMMON SUN-DRIED.

Apricots	5½@ 6½
Apples, sliced	2 @ 2½
Apples, quartered	2 @ 3
Figs, Black	— @—
Figs, White	— @—
Peaches, unpeeled	2 @ 3
Pears, prime halves	2½@ 3½

Prices for 1900 crop Prunes, as named by the California Cured Fruit Association: District No 3, four sizes, 3c. per lb.; 40-50s, 4¾c; 50-60s, 4¼c; 60-70s, 3¾c; 70-80s, 3¼c.; 80-90s, 2¾c.; 90-100s 2¼c; 100-120s, 1¾c; 120 up, 1¼c. The selling price of Prunes for District No. 1 is ⅛c. per pound less, and for District No. 2 ¼c. per pound less than for District No. 3.

RAISINS.

It was reported that the Association contemplated disposing of its entire holdings, some 750 carloads, to the packing firm making the best bid. But the proposal to make a lump sale of the stock has been withdrawn. The coming crop will probably not exceed 4000 carloads. The market is quiet. In the matter of quotable values there are no official changes reported.

F. O. B., CARLOAD LOTS.

Imperial Clusters, 6-crown, ℔ 20-lb box	3 00 @—
Dehesa Clusters, 5-crown	2 50 @—
Fancy Clusters, 4-crown	2 00 @—
London Layers, 3-crown, ℔ box	1 60 @—
do do 2-crown, ℔ box	1 50 @—
(Usual advance for fractions.)	
Loose Muscatel, 4-crown standard, ℔ lb	—@ 7
Loose Muscatel, 3-crown	—@ 6½
Loose Muscatel, 2-crown standard	—@ 6
Loose Muscatel, seedless	—@ 6½
(Above prices for loose raisins are for 50-lb boxes.)	
Seeded Raisins, 1-lb packages, ℔ lb	5¼@—

Loose Muscatel Pacifics, 5½c., 5¼c. and 5c. for 4, 3 and 2 crown respectively.

Thompson Seedless.—Bleached fancy, ℔ lb., —c; choice, 9c; standard, —c; prime, —c. Unbleached 7½@9c.

Sultanas.—Bleached fancy, ℔ lb., —c; choice, 8½c; standard, —c; prime, —c. Unbleached, 7c.

CITRUS FRUITS.

The Orange season is practically ended. Small sales are being made within range of 50c.@$2.50 per box, as to kind and quality of Orange. Lemons are in fair request at unchanged rates, with no scarcity of supplies. Prices for Limes remained as last noted.

Oranges—Navel, ℔ box	1 00@2 50
Seedlings, ℔ box	—@—
Valencias, ℔ box	1 50@2 50
Grape Fruit, ℔ box	75@1 50
Lemons—California, select, ℔ box	2 25@2 50
California, good to choice	1 75@2 00
California, common to fair	1 00@1 50
Limes—Mexican, ℔ box	4 00@5 00

NUTS.

California Almonds are being steadily held. The European product is reported lower. Market bare of Walnuts. The Peanut market is quiet but steady.

California Almonds, shelled	18 @22
California Almonds, paper shell, ℔ lb	12 @14
California Almonds, soft shell	10 @12
California Almonds, hard shell	6 @ 7
Peanuts, California, fair to prime	4½@ 5½
Peanuts, Eastern, hand-picked	5½@ 6
Pine Nuts	5 @ 6

WINE.

Little doing in a wholesale way, and nothing of consequence now offering from first hands. Values are largely nominal and must remain so until this year's wine comes upon the market. Quotable rates for dry wines of last year's vintage continue at 22@25c per gallon. Prospects for good prices for coming yield could not well be more favorable. Shipments of wine by sea from this port in May were 596,600 gallons and 1050 cases, exclusive of amount forwarded to Hawaiian Islands. Total shipments by sea for May, 1900, were 426,700 gallons and 660 cases.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1900.	Same time last year.
Flour, ¼ sacks	104,874	6,513,717	6,384,855
Wheat, centals	144,916	8,548,500	6,951,018
Barley, centals	39,944	3,754 041	5,124,431
Oats, centals	9,045	617,355	796,444
Corn, centals	1,790	121,885	155 896
Rye, centals	940	188,229	105,687
Beans, sacks	20	545,750	365,654
Potatoes, sacks	16,737	1,520,777	1,238,998
Onions, sacks	2,572	187,695	172,162
Hay, tons	2,990	161,383	154,962
Wool, bales	1,242	55,867	60.076
Hops, bales	195	8,493	10,646

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1900.	Same time last year
Flour, ¼ sacks	77,412	3,968,892	4,279,843
Wheat, centals	182,896	7,836,290	6,304,112
Barley, centals	2,680	2,016,515	3,968,274
Oats, centals	350	49,816	47,239
Corn, centals	...	3,538	23,284
Beans, sacks	123	14,073	27,296
Hay, bales	365	87,256	141,862
Wool, pounds	97,884	1,362,175	4,751,123
Hops, pounds	10,114	573,346	1,103,242
Honey, cases	...	2,213	3,583
Potatoes, pack's	1,726	132,996	75,069

California Dried Fruit at New York.

NEW YORK, June 26.—Evaporated apples, common, 3½@4c; prime wire tray, 5½@5¾c; choice, 6@6½c; fancy, 6½@7c.

California Dried Fruits.—Market quiet and without special changes in quotable values.

Prunes, 2⅞@6½c.

Apricots, Royal, 8@12½c; Moorpark, 8½@14c.

Peaches, unpeeled, 6@10c; peeled, 12@18c.

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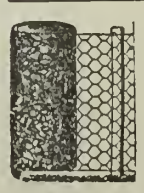

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